REVIEW OF THE PACKING AND MARKETING SYSTEM FOR THE BRITISH COLUMBIA VEGETABLE INDUSTRY

Executive Summary

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AGRI-FOOD REGIONAL DEVELOPMENT SUBSIDIARY AGREEMENT

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I. INTRODUCTION

BACKGROUND

The B.C. Coast Vegetable Co-operative Association (BCCVCA or Co-operative) is located in Richmond at a facility built in 1959. The Co-operative provides complete handling facilities from receiving of ungraded product to sales and destination delivery.

The Co-operative markets regulated products at current market values and provides the producer a net return from monthly sales pools after subtracting the costs of operation of the plant, administration and sales. The organization does not receive a sales mark-up in respect to sales value but is entitled to deduct the charges for services as authorized by the Co-operative's Board of Directors and the B.C. Vegetable Marketing Commission. Although the Co-operative attempts to maximize the price of the vegetables that they sell and hence the growers' return, they have to be price competitive with products imported from other jurisdictions.

The B.C. Vegetable Marketing Commission is empowered under the Natural Products Marketing Act to regulate the packing, distribution and marketing of specific vegetables in British Columbia. These products are known as regulated products. Although the Commission establishes prices for products within its jurisdiction, it cannot place restrictions on similar products produced in areas beyond the jurisdiction of the Commission, nor on products imported from other provinces or other countries. Therefore, the pricing of the local product is subject to and determined by the marketplace.

Regulated root crop products are presently marketed through 5 agencies licensed as the sole selling agencies by the Commission:

- B.C. Coast Vegetable Co-operative Association;
- Interior Vegetable Marketing Agency Co-operative;
- Island Vegetable Co-operative;
- Port Potato Company; and
- Vancouver Island Produce.

The B.C. Coast Vegetable Co-operative Association and the Port Potato Company provide full grading, washing, sizing, packing and pre-packaging, and marketing services for the member companies. The Island Vegetable Co-operative in Victoria has facilities to provide these services, however the majority of their root crop vegetables other than potatoes, are washed, graded and packed on the farm. All of the agencies act as sole selling desks for their members.

PURPOSE OF THE STUDY

The marketing of vegetables in British Columbia is conducted in a number of different ways depending upon:

- The area of the province;
- The organization of the growers; and
- The commodities grown.

The costs of washing, grading, packaging, sales and distribution have become increasingly significant in the marketing of fresh vegetables and are conducted differently by the different agencies of the Commission.

In order that the members of the B.C. Coast Vegetable Co-operative Association receive an adequate return it is important to be aware of whatever alternative methods of handling and marketing might exist that could reduce the

operating costs of the Co-operative and improve the growers' return. Consequently, the Co-operative retained Western Management Consultants in March 1989 to undertake a review of the operations and marketing systems of the organization.

OBJECTIVES AND SCOPE

The overall objective of the study is to review the various approaches available for the packing and marketing of potatoes, carrots, onions, rutabagas, beets and parsnips as produced by members of the B.C. Coast Vegetable Co-operative Association and to recommend alternatives that would result in improved returns to growers. To accomplish this objective, we addressed the following issues:

- A review of existing marketing systems for root vegetables as used by the various agencies in British Columbia including grading, washing, packaging, shipping, sales and distribution;
- For each of the above functions, costs were to be analyzed including labour, equipment, packaging, building, real estate, overheads and other operating and capital costs as pertinent;
- In comparative systems, costs of performance were to be assessed for similar functions performed by major competitors in Washington and Alberta and any other jurisdictions that are agreed to with the client;
- The cost effectiveness of growers performing certain levels of pre-grading prior to shipping to a central grading and packaging facility for potatoes and other root crops were evaluated; and
- An assessment of alternative methods of marketing operations that would result in cost savings to the grower or maintaining a high level of acceptance by wholesalers, retailers and the hotel, restaurant or institutional food sector were to be evaluated.

Recommendations, alternative marketing strategies and attendant costs are made for the 5 and 10 year timeframes.

APPROACH

In undertaking the study, we completed the following steps:

- Reviewed available reports on the B.C. vegetable industry and other jurisdictions;
- Conducted a detailed review of the financial, operating and sales data of the Co-operative for the past 3 years;
- Interviewed key personnel of the Co-operative including the General Manager, Controller, Marketing Manager, Sales Personnel, Plant Personnel Supervisors and two Plant Foremen;
- Conducted detailed interviews with 32 grower members of the Co-operative;
- Interviewed the General Managers of the other 4 agencies licensed to market root crop vegetables in British Columbia;
- Conducted interviews with 13 vegetable growers on Vancouver Island, in the interior of the province and elsewhere who perform some or all of washing, grading or packing on the farm;
- Conducted interviews with 12 trade representatives in British Columbia including the major retail/wholesale grocery chains, general produce wholesalers and specialty food service wholesalers;
- Interviewed 19 vegetable packing operations and marketing boards in Alberta, Washington, Manitoba and Ontario; and
- Based on the above, we evaluated and reported on alternative operating and marketing systems with their attendant costs. Also, we have made recommendations on alternatives available to the B.C. Coast Vegetable Co-operative Association.

LIMITATIONS OF THE STUDY

We have followed the Terms of Reference as set out by the Co-operative in conducting our study. Certain specific tasks that were not requested and have not been undertaken include:

- A review of in-plant operating efficiency or labour efficiencies. This type of review could only be done throughout the season while the plant is in operation as labour efficiencies will change by crop, timing, volume and other factors;
- A review of the individual performance of any employees. Therefore we cannot comment upon the effectiveness of the individuals; and
- Audits of the accuracy of the cost or efficiency data provided by interviewees from other agencies or jurisdictions. Therefore, the data collected should be considered as "best estimates".

The detail and precision of data from other agencies, boards and packers was not as good as we would have preferred. Other organizations often did not have data in the format or depth that was required. We had to use judgement in the acceptance or rejection of some data.

THE REPORT

The following chapter describes the vegetable marketing system in British Columbia. In Chapter III we present the results of our survey of members of the Co-operative. The opinion of major customers of B.C. Coast are summarized in Chapter IV. In Chapter V a financial and operational review of

the Co-operative is presented with an analysis of cost elements in the following chapter. Comparative marketing systems in other jurisdictions are discussed in Chapter VII, including a comparison of costs and charges. The alternatives of on-farm packing are presented in Chapter VIII. In Chapter IX we present our conclusions and recommendations followed by alternative strategies in Chapter X.

The appendices contain:

1. Grower Survey Questionnaire;
2. Customer Survey Questionnaire;
3. Direct Cash Costs for Washing, Grading, Receiving, Shipping and Packaging;
4. Total Cost by Crop and Function;
5. List of Contacts.

It is important to note that all financial numbers in this report are in Canadian dollars (U.S. converted at current rate of $1.18 Canadian = $1.00 U.S.)

VII. MARKETING SYSTEMS IN OTHER JURISDICTIONS

COMPARISON AND COSTS

To examine alternative approaches for the Co-operative, we interviewed vegetable packer/graders/marketers in other jurisdictions including Alberta; Manitoba, Ontario and Washington State. In this chapter we first present a discussion of these systems and then a comparison of costs and operating data with B.C. Coast.

ALBERTA

Potatoes and other root crop vegetables are handled by two separate marketing boards in Alberta. The systems for handling these products differ although some packers do handle both potatoes and root crop vegetables. This marketing system has only been in place for about one year and has not yet stood the test of time, however, both the Boards and packers expressed satisfaction with its operation.

Potatoes

The eleven potato packers in Alberta make slightly differing arrangements with their suppliers. However, in general, they work as follows:

- the Board sets the weekly price, after consultation with the packers;
- the payout to the grower is the Board price less a $55.00 per ton plant charge for acceptable product, in other words, this is a net ton payout. There is an additional $20 per ton charge for cooling on early potatoes;
- cullage rates vary in the 10%-20% range as some growers pre-grade their product;

- culls belong to the plant, who currently sell them to peddlers for about $5/cwt ($100/ton);

- at this stage, the packer owns the potatoes and decides how to price them according to the market. The plants that we spoke to packed 50%-60% of their product in poly;

- the packers sell at market price, however they have determined their packing costs or up-charges such that, on average, they will be profitable. These up-charges, added to the net grade out cost, are, for instance:

poly 10/5 lb.	$76
poly 5/10 lb.	$56

- on average, across all pack sizes and types (poly, bulk etc.), Alberta packers estimated that their costs, including a reasonable return, are $70 per net ton to package and sell potatoes (costs after washing/grading);

- labour costs per hour vary among packing houses as does efficiency and cost per ton. These costs are illustrated in Table 7.1 for two of the plants that provided adequate information. In general, non union wages plus benefits are in the $8-10 per hour range and unionized plants in the $11-12 per hour range.

Vegetables

The majority of growers grade and pack their own vegetables in Alberta. There are 3 or 4 large packers who are also owned by growers. Some of the smaller growers deliver their pre-packaged product to the larger ones for distribution and delivery to the wholesaler. Packers make various arrangements with growers depending on the product. For instance with carrots, one packer explained that they receive the field-run carrots from the grower and after hydro-cooling and washing, they are graded. The packer pays $83.00 a ton for #1's and $57.00 for jumbos and nothing for culls. Another packer charges $10.00 per pallet for a marketing fee for vegetables that have been pre-washed, graded and packed on the farm. This packer delivers to wholesalers.

General

All of the operations contacted in Alberta continue to operate even when they are out of local product. All of the packers, including those acting as co-operatives and those owned by individual producers, buy product from other jurisdictions in the off-season. At the present time, some of these packers are running California new potatoes. Also, they occasionally pack oranges and U.S. onions or any product that will go through their plant in order to use their facilities efficiently and profitably.

Packers in Alberta strongly advised against fragmenting the B.C. industry into many farm wash, grade and pack operations. The opinions expressed by individuals with experience in marketing vegetables (recall they are mostly farm packed), was that variation in product quality occurs and that centralized systems are more efficient than farm-based operations. They were hoping to centralize more of the vegetable functions in the future.

MANITOBA

Of all the comparative systems examined, Manitoba's is the most similar to that of British Columbia. Manitoba has a vegetable production system similar to that of this province and the Manitoba Vegetable Marketing Board maintains a central packing house and distribution centre. There are about 60 growers delivering to the Board facilities, of which about 35 are potato growers.

The Manitoba facilities usually operate on a 12 month basis either on local production or on imports. Total sales through the Board were approximately $18 million in the 1988/89 year. Approximately 33,000 tons of table potatoes were sold by the Board, of which 47% was shipped either directly from the farm to the customer or was packaged on farm for shipment by the Board.

The Manitoba Board sells products that are packed and delivered in three different ways:

- packed on the farm and delivered directly to the buyer;
- packed on the farm and delivered to the Board for delivery to the customer; and
- packed at the Board plant.

The smallest portion of the products are packed on the farm for direct delivery. In the case of potatoes, this amounts to approximately 15% of sales, onions 33% and carrots 9%. Most of the direct sales are made from larger

farms. Sales are arranged by the Board and orders may be filled at the farm and delivered, usually in full truck-load lots. In the case of potatoes, onions and carrots, these farm-to-customer deliveries are in bulk pack. For instance, potatoes are in 75 lb. bags. In order to conduct this sales service and also the collection of invoices and payments to the grower, the Board charges a handling charge which differs by crop but averages $9.60 per ton. Each of the bags or containers used by the growers for packing on the farm would have the Board's label and would state that it was packed by (the name of the grower). Also, bags are tagged with a grower number. The Board reports very few customer complaints or returns. Any returns are charged back directly to the grower. Customers that are served directly may be large wholesale retailers like Safeway or out-of-province locations.

Another category of packing is for the product to be packaged on the farm and delivered to the Board for further delivery to customers. The percentage that is done this way is: potatoes 32%, onions 31% and carrots 91%, for example. In this instance, only bulk packs for potatoes and onions are done at the farm level, that is, anything 50 lbs. or larger (in Manitoba the 75 lb. bag is relatively common). The carrots are cello packs and bulk. This category of farm pack is utilized for most of the other vegetable crops that are carried by the Board which includes cole crops, salad crops and other vegetables. Once again, the packages are labelled with the Board's insignia and "packed by" whoever it was. The handling charge of $9.60 per ton applies to this type of product also.

The third way in which product is received and handled is either in an ungraded state for washing and grading or in a washed and graded state for packaging. Only onions and potatoes are graded and packed at the plant. Fifty-three percent of the potato sales go through this process and 36% of onions. All of the poly packs sold by the Board are packed at the Board facilities. Discussions with growers confirmed that they are favourable to this relationship because the cost of efficient and accurate packaging equipment is beyond the financial capability of most growers whereas the cost of establishing a washing and grading line is not as high.

About half of the potatoes received at the plant require washing and grading, for which there is a charge of $41.33 per gross delivered ton. The cull rate is very low at about 5% due to the prevalence of washing and grading facilities on the farms (termed "pre-grading") and the fact that growers do not want to pay $41.33 for product that is going to be culled out. The Board charges $38.72 per net ton to wash and grade number one potatoes and $41.39 per ton for #2's. On all products there is added a handling charge of $9.60 per saleable ton. The cost for packaging is recovered from the market price and is not a direct charge against individual growers. In other words, it could be looked at as a pooled cost. The cost for packaging onions is $70.00 per ton and for potatoes it depends upon the package that they are put in to as follows: 5/10 lbs. at $50.00/ton, 10/5 lbs. at $54.40/ton.

The revenue of the Board comes from several sources including rental of space to other marketing boards; and the handling charge which includes administration, receiving and shipping, maintenance and selling charges. This charge is calculated annually and this year they intend to examine this charge

in October to see if it has kept up with the costs of operation for the year to date. If it has not kept up, the charge would be increased in order to make up the shortfall before the year-end in June.

A third source of income to the Board is the custom processing of products such as oranges, grapefruits and other fruit products for customers such as Canada Safeway or the repackaging of imported product from the United States. Products such as citrus fruits which are brought in by Safeway sometimes have to be repackaged or regraded and the Board does this on a custom basis for $100.00 per ton or $25.00 per hour. In the 1988/89 year, a substantial contribution to the bottom line of the Board was the repackaging of potatoes and onions from the United States. During the slow time of the year when local stocks are insufficient to cover needs, potatoes are imported in bulk 100 lb. sacks for reprocessing. In the past year, this reprocessing contributed approximately $100,000 net profit to the bottom line (which is a direct coverage for overhead).

The Board operations are unionized and the average hourly rate, including benefits, is $12.36 per hour. The Board has an office staff of seven.

Processing Potatoes

Processing potatoes do not pass through the Board facilities nor does the Board enter into price negotiations between growers and processors. The major french fry operators in Manitoba do not require washing or grading of

their product prior to delivery. All arrangements for contract and payment are made directly with growers. Campbell Soups and Old Dutch Potato Chip Plant require the product to be graded prior to delivery.

ONTARIO

There are approximately 380,000 tons of potatoes grown annually in Ontario with about 50% being marketed fresh. The Ontario Fresh Potato Marketing Board sets weekly prices for potatoes through a conference call with various industry participants such as retailers, buyers, growers and wholesalers. Processed potatoes are controlled through the Ontario Potato Growers Marketing Board. A recent report by Coopers & Lybrand for the Ontario Fruit and Vegetable Growers Association describes the distribution system as follows:

> "The most significant movement of fresh potatoes to the market is through packing houses. Most of these packing facilities are part of the grower's operations; others are independent packing houses. The growers who have their own packing facilities generally sell directly to the retail chains. The independent packers/shippers target these same buyers, as well as export markets."

Discussions with the Ontario Fresh Potato Marketing Board indicate that they take no active role in the actual selling or marketing of the product. The major competitor for Ontario potatoes is Prince Edward Island who have a highly developed market, particularly for Russets. The Prince Edward Island potato is to Ontario as the Washington potato is to British Columbia and acts as the price setter.

A summary of the comments and recommended improvements from the Coopers & Lybrand report suggests that:

- there are too many small grower/packers in Ontario which leads to inconsistent product and availability;
- the Board is ineffective in its regulation of the industry therefore price cutting takes place;
- the quality and size of the Ontario product is often inconsistent and storage facilities are not efficiently used by individual growers;
- an improvement would be to have a one-desk selling concept similar to that of British Columbia.

We interviewed a member of the Ontario Fresh Potato Marketing Board. This individual is considered to be one of the larger packer/shippers in the province. He produces about 1,000 tons of his own production per year and also handles a small quantity of other growers' potatoes. He has a facility that can wash and grade 50 tons per day with a 10% cull rate. He estimates that his average cost per net ton is $70.00 from storage through to shipping. He reported that a recent industry survey suggests that the average cost of washing, grading and packing potatoes is $66.00 a ton. He feels that his operation is not efficient due to the size and equipment but he still makes money at that rate. His labour is not organized as it is mostly imported Jamaican farm workers. The wage rate with benefits and housing averages $8.00 an hour although the actual wages paid average $5.15 per hour. This grower packs in poly bags, 50 lb. cartons, bags and baskets. These costs are low as most of the packing operations in Ontario are done on farm. Many farm operators tend to report cash costs and may not include depreciation or an adequate wage for management.

TABLE 7.5

WASHINGTON STATE PACKERS

Operating Information

	Plant 1	Plant 2	Plant 3	Plant 4
Ave. Gross Tons/day (from storage)	300	325	100	250
% Culls	35	37	30	25
Net Tons Packaged	195	205	70	188
Pack Distribution (%)				
Poly	45	41	30	40
Cartons/other	10	12	15	10
Count	35	40	35	35
100# jute	10	8	20	15
No Plant Labour	32	52	35	40
$/hr. incl. Benefits	$5.02	$5.02	$5.31	$4.72
Hours of Labour/ton (wash, grade, pack)				
Gross	1.17	1.28	2.80	1.37
Net	1.31	2.03	4.00	1.82
$ of Labour/Ton				
Gross	5.88	6.43	14.87	6.46
Net	6.58	10.03	21.24	8.58

Plants 1, 2 and 4 relatively new
Plant 3 old

WASHINGTON STATE

The Washington State potato industry is very different from that of British Columbia. The industry is concentrated in the Columbia Basin and predominantly grows a Russet variety of potatoes. Eighty-five to eighty-seven percent of the production goes to processing, leaving 13% to 15% for the fresh market. This means that the Washington potato packer can high grade a very fine quality potato from a large volume from which to select. Moreover, the quality of the Washington Russet is excellent due to the long growing season, ample irrigation and fine soil quality. All of these factors combine to make a very high quality, economic product against which it is difficult for the B.C. growers to compete.

Many of the large packing houses in Washington State which are close in size to the Co-operative, are owned by large growers. These packing houses are supplied mostly by the growers' production although they will buy outside.

Several different grower/packer arrangements exist. One of these is the pre-season contract wherein the grower agrees to deliver a specific volume of product at a specific pre-season, set price. He carries the risk that he has agreed to a price in a year when the prices may actually go up in the marketplace, however, he also is assured of a floor price. Under this system, the price will be based on a cost of production with a quality incentive depending upon:

- The percentage of # 1's;
- The percent free from bruising;
- The percent in the 8 to 14 oz. size; and
- Specific grades.

Another means of purchasing potatoes is on consignment. In this arrangement, the packer agrees with the farmer before the season to pack and sell his produce. The grower owns the potatoes all the way through the system but is guaranteed a floor price in the market. Under this system, the grower may actually sell his product at a higher price to someone else if he does not feel that he is going to get as good a price from the packer he is consigning to.

Packers may just buy on the open market from growers. This strategy accounts for a small percentage of the industry as it is difficult to secure sufficient product to ensure efficient plant operations.

We interviewed seven packing houses in the Columbia Basin, several of which provided detailed operating data. Some packers were unable or unwilling to supply data in sufficient detail or format to be comparable.

Also, we reviewed the information from the anti-dumping hearings for pertinent data on packing house costs. The latest information in this submission was 1982 data, and even this was from jurisdictions other than Washington State or was for processing potatoes. Researchers at Washington State University (Pullman) and at Oregon State University (Corvallis) confirmed that the 1982 information was all that they had on packing costs as the subject had not been researched since that date.

TABLE 7.4

U.S. GROWER CHARGES - WASHINGTON STATE POTATOES

$/Net Ton Sold

	Plant 1	Plant 2	Plant 3	Plant 4*
100 lb. Sacks	85.00	59.00		
50 lb. Counts	101.50	80.00		
Poly 5/10	113.00	80.00		
Poly 10/5	139.00	94.00		
General			93.20 for all packs	$11.80/gross tons (15.73 net) plus all direct plant labour costs
Sales (brokerage)	6.00	6.00	6.00	6.00
Culls	$24 charge grower get difference between charge and sale	Belong to plant	Belong to plant	Belong to grower - delivery charge to processor

*very little custom work

Pertinent information on Washington operations include:

- it appears that each individual Washington State packing house makes its own separate arrangement with growers vis a vis charges and how to handle culls etc. These charges vary greatly and are illustrated for four plants in Table 7.4. Most packers interviewed depended on their own potatoes with custom work representing less than 20% of their throughput;

- the data illustrated for four of these plants in Table 7.5 are for potatoes from storage and indicate the size of these plants ranging from 100-325 gross tons of throughput per day. Each of these plants could process an additional 50% throughput in field run product;

- the high cull rate, averaging over 30%, reflects the opportunity to market these culls at $30-45 per ton (depending upon dry matter content) to processors (dehydrators, hashed borwn and french fry plants). Each plant differs in its treatment of culls vis a vis the grower, and this is reflected in the rate of grower charges illustrated in (Table 7.4):

  - plant with highest charges, return to the grower any of the sale price above their $24/ton (Cdn) cull grading charge;

  - other plants with lower per ton charges keep all culls; and

  - another plant that uses a direct cost/charge system charges for delivering the culls to the processor but the grower owns them.

- poly packs and count boxes account for 75%-80% of the pack;

- labour costs are comparatively low as some of the plants are unionized and pay minimum wage at about $5.00 (Cdn) per hour;

- none of the packers would reveal their detailed financial information, however they all confirmed that they are comfortably profitable at the charge rates illustrated in Table 7.4. Comparison with B.C. Coast is discussed further in this report.

TABLE 7.1

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rates and Handling Time for Potatoes

B.C. Coast vs. Alberta

		Alberta	
	B.C. Coast	Plant 1	Plant 2
$/hour plant labour (incl. benefits)	$14.50	$11.34	$7.98
Person hours per net ton to wash, grade and pack	2.35	2.00	2.96
Cull Rate (average)	28%	20%	10%
% in poly bags	25%	50%	60%
$/net ton to wash, grade and pack	$34.08	$22.68	$23.62

Direct comparisons of person-hours by function were not possible because this data was not available from Alberta operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 55% pack-out into poly bags in order to compare the B.C. Coast operation to Alberta producers.

TABLE 7.2

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rate and Handling Time
for Potatoes

B.C. Coast vs. Manitoba

	B.C. Coast	Manitoba
$/hour plant labour (incl. benefits)	$14.50	$12.36
Person hours per net ton to wash and grade	1.19	1.00
Person hours per net ton to pack	1.24	1.22
Cull Rate (average)	28%	5%
% in poly bags	25%	90%
$/net ton to wash, grade and pack	$35.24	$27.44

Direct comparisons of person-hours by function were not possible because this data was not available from Manitoba operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 90% pack-out into poly bags in order to compare the B.C. Coast operation to Alberta producers.

COMPARISON OF B.C. COAST WITH OTHER JURISDICTIONS

Tables 7.1 - 7.3 present data comparing the labour rates and efficiency (hours/ton to wash, grade and pack) of B.C. Coast and plants in Alberta, Manitoba and Washington.

Each operation has a different mix of packaging and sizes (poly, bulk, sacks, count etc.) This packaging mix affects the total hours required, per net ton, to wash, grade and package potatoes. For example, poly-bagging requires more labour than bulk packaging into boxes. Because we had detailed costing data by pack type for B.C. Coast but not for other operations, we had to adjust the hours/net ton for B.C. Coast in each of the tables to reflect a packing mix that was comparable to the mix at the plants against which B.C. Coast data was compared. This adjustment leads to differing hours/ton for B.C. Coast on each table.

Our observations are as follows:

Alberta - Table 7.1

- The B.C. Coast cull rate of 28% is higher than the 10-20% experienced in Alberta where they cull more on farm;
- B.C. labour rate is $4.84 per hour higher than Alberta's;
- B.C. Coast is 5.2% more efficient than the average of the Alberta plants with 2.35 person-hours required, per net ton, to wash, grade and pack compared to 2.48 person-hours in Alberta.

Manitoba - Table 7.2

- B.C. Coast cull rate at 28% is five times that of Manitoba where most growers pre-grade prior to delivery;
- B.C. Coast labour rate is $2.14 per hour higher than that for Manitoba;

TABLE 7.3

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rates and Handling Time for Potatoes

B.C. Coast vs. Washington State

		Washington			
	B.C. Coast	Plant 1	Plant 2	Plant 3	Plant 4
$/hour plant labour (incl. benefits)	$14.50	$5.02	$5.02	$5.31	$4.72
Person hours per net ton to wash, grade and pack	2.20	1.80	2.03	4.00	2.02
Cull Rate (average)	28%	35%	37%	30%	25%
% in poly bags	25%	45%	41%	30%	40%
$/net ton to wash, grade and pack	$31.90	$9.04	$10.19	$21.24	$9.53

Plants 1, 2 and 4 are relatively new while Plant 3 is old.

Direct comparisons on person-hours by function were not possible because this data was not available from Washington operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 40% pack-out into poly bags in order to compare the B.C. Coast operation to Washington producers.

TABLE 7.6

B.C. Coast Vegetable Co-operative Association

Comparison of Grower Charges

	Agency Fee	Service Charge	Other	Total Charges	Packaging[1]	Total Packaged Grower Cost	%[4]
B.C. Coast							
Standard	$11.50	$45.83	$12.60	$69.93	$50.00	$119.93	100.0
Count Pack	$11.50	$48.61	$29.60	$89.71	$50.00	$139.71	116.5
Manitoba (poly)							
Washed & graded in plant	$ 9.60	$43.40		$53.00	$52.20	$104.20	86.9
Packaged only in plant	$ 9.60			$ 9.60	$52.20	$ 61.80	51.5
Alberta (poly)		$55.00		$55.00	$66.00	$121.00	100.9
Washington	Sales[2] (Brokerage)						
Poly - Plant 1	$ 6.00		($13.00)[3]		$126.00	$119.00	99.2
2	$ 6.00				$ 87.00	$ 93.00	77.5
Count - Plant 1	$ 6.00		($13.00)		$101.50	$ 94.50	78.8
2	$ 6.00				$ 80.00	$ 86.00	71.7
Flat Rate - Plant 3	$6.00				$ 93.20	$ 99.20	82.7

1. Packaging is a cost to the grower pool not actually a charge but is shown in order to show actual charges in each jurisdiction.

2. Washington State packers charge $6.00/ton (brokerage) to cover all sales costs including salaries.

3. This packer charges for handling culls but pays back the diference between cull sales and the handling charge. Estimated at 35% cullage and value of $40.00/ton.

4. Total cost as % of B.C. Coast total for standard pack.

- B.C. Coast is 19% less efficient in washing and grading and 1.6% less efficient in packaging than Manitoba, based on person-hours per ton. This is very reasonable as 75% of Manitoba potatoes are delivered pre-washed and graded.

Washington - Table 7.3

- B.C. Coast's cull rate of 28% is lower than the average 32% for Washington. However, Washington packers cull product that B.C. Coast may not as they receive $40.00 per ton for culls, whereas B.C. Coast pay up to $25.00 per ton to have the culls removed;

- B.C. Coast labour rate is $9.48 per hour higher than that for Washington packers;

- At $9.48 per hour premium over Washington labour rates it costs B.C. Coast $22.11 per ton more to wash, grade and pack potatoes than it does at the more efficient Washington plants interviewed.

- Compared to the three efficient plants (also new and large), B.C. Coast is 12.8% less efficient as measured by person-hours per net ton to wash, grade and pack.

In summary, the labour efficiency of B.C. Coast (person-hours per net ton wash, grade and pack) was close to that of comparable plants in Alberta, Manitoba and Washington although the cost per hour of labour was significantly higher.

Comparison of Grower Charges

Table 7.6 compares grower charges between plants in other jurisdictions and B.C. Coast. This table illustrates that:

- Total B.C. Coast grower charges are comparable to those in other jurisdictions, particularly in Alberta;

- Comparing B.C. standard pack with poly rates shows that B.C. Coast is only $16.20 higher (15.6%) than Washington. One should recall that B.C. Coast labour rates are $9.48 per hour higher than those in Washington.

- The relatively high charge rate in Washington compared to their low labour cost may account for their reported higher profitability.

VIII. ANALYSIS OF ON-FARM PACKING

The subject of washing, grading and/or packing of products on the farm is being considered by members of the Co-operative. It is anticipated, by those members, that the costs of on-farm processing will be lower than the present charges for those services by the Co-operative. In order to assess the costs, we conducted interviews with growers who perform these functions on Vancouver Island, in the Interior of the province and in Ontario to determine their on-farm processing costs. The data collected was variable and we had no way to confirm it; however, it was the best estimate by the individuals interviewed. The costs of processing on the farm will vary by:

- Type of crop grown;
- Volume of product packed;
- Hours of labour per ton;
- Dollars paid per hour; and
- Costs of capital equipment, buildings and other facilities.

CAPITAL COSTS

The capital cost estimates varied greatly among respondents. Almost all of the respondents stated that when they started into the washing, grading and packing on-farm, they did so in a very limited way and manufactured their own washing and grading equipment. Most of the individuals that we interviewed have since grown to handle larger quantities of production than they originally started out with. For instance, the range of potato volume handled by the growers interviewed ranged from 600 to 2,800 tons per year.

Respondents stated that their capital costs varied from about $4,000 to $200,000 for equipment alone not counting buildings. Also, we enquired as to what the individuals estimated it would cost for them to set up an efficient operation today. In any manufacturing or processing operation, there is usually a trade-off between capital costs and labour. That is, the more automated the machinery, the higher the capital cost of that machine will likely be but also the lower the labour input. Therefore, if labour is relatively inexpensive, it may not pay to invest a substantial amount of money in equipment.

It is estimated that a grower could set up a 1,200 to 1,500 ton per year potato washing and grading line for a minimum of $12,000 to $15,000 if they were able to make a large amount of the equipment themselves and/or purchase used equipment and a 5-700 ton line for $5,000 to $10,000. It is also estimated that packaging equipment could be obtained for somewhere in the range of $15,000 to $30,000 depending upon the speed of operation required and the variability in package size. If the same equipment were to be purchased new, then it has been estimated by our respondents that the cost would be closer to $100,000 for a complete wash, grade and packing line for 1,500 tons/year.

It is accepted industry practice to amortize the equipment value on a straight line basis over 20 years.

Further costs will be incurred in construction of a suitable building and installation of appropriate water, utilities and pollution control systems. In areas that are not on city water, the washing function could become a problem as

TABLE 8.1

B.C. Coast Vegetable Co-operative Association
Comparison - Farm Pack Person-Hours Per Ton*

Crop & Annual Product Tons		Wash/Grade Hours		Packaging	Total Hours
		Gross Ton	Net Ton	Net Ton	Net Ton
Potatoes Grower 1	700	0.60	0.80	1.00	1.80
Grower 2	2,800	0.80	1.00	1.00	2.00
Grower 3	1,200	0.80	1.07	1.07	2.14
Grower 4	800	0.80	1.00	1.00	2.00
Grower 5	500	-	-	-	1.33
Grower 6	1,400	-	-	-	3.33
B.C. Coast		1.19	1.67	1.24	2.91
Carrots	120 - 200				8.20
Onions	250				5.00

*Hours as estimated by growers interviewed.

wells may not be sufficient to supply adequate quantities of water. Also, disposal of the wash water will most likely require a settling pond prior to further disposal of the water into water courses, onto the fields or into a sewage system.

Onions

It was estimated by the growers interviewed that it cost about $10,000 to $15,000 to set up a grading and bagging operation for 250 to 300 tons per year of onion production.

Carrots

The growers who process their own carrots estimated that for 100 to 120 tons per year of carrots, it would take about $20,000 to $25,000 to set up the equipment and grading room. This would include doing some building of equipment for one's self.

LABOUR COSTS

The labour hours per net ton (tons of saleable product) varied according to different operators estimates. Table 8.1 illustrates the hours per ton estimates for farm washing, grading and packing for potatoes, carrots and onions. The estimate for potatoes is significantly lower than the hours per ton reported by the Co-operative. Although there is consistency in the hours reported, our experience in measuring grower cost of production hours suggests that they are usually underestimated by the people involved. It is likely that

The hours for carrots and onions are slightly higher than those reported by the Co-operative. Unfortunately, none of the grower respondents keep detailed records of production and hours of operation, therefore these numbers are best estimates.

All of the growers interviewed claimed that they were able to get sufficient labour at $6.00 to $8.00 per hour, but they thought that it was because they lived in rural communities where there was little competitive employment. In the Lower Mainland area, the availability of labour at those rates may not be as high although only individual growers themselves will know, from their experience, what the availability of labour is. These labour rates and hours only illustrate the direct labour on the line and do not include the supervisory time required by the grower or his appointed supervisor. Most growers interviewed believe that if they are not actively involved in the supervision of the washing, grading and packaging crew, that productivity drops off drastically and costs consequently increase. Also, these costs do not include the costs of delivery of the finished product to a central warehouse or to the customer. However, this cost is likely to be similar to the cost that is now incurred by the grower in delivering field run product to the Co-operative for processing.

Table 8.1 illustrates the estimated hours to wash, grade and pack potatoes, carrots and onions on-farm. The average plant labour rate for the Co-operative is $14.50 per hour. It is probable that labour to perform wash, grade and pack functions on the farm could be hired for $8.00 per hour. The differential between these rates is $6.50 per hour.

TABLE 8.2

B.C. Coast Vegetable Co-operative Association
Potential Labour Savings by Washing, Grading & Packing On-Farm*

$/Ton

1. Assume grower's time estimates in Table 8.1 are correct.

Potatoes

Washing, grading	(gross ton)	$10.86
	(net ton)	16.22
Packaging	(net ton)	9.98
Total	(net ton)	$26.20

Carrots

Onions

2. Assume grower's hours are the same as the Co-operative.

Potatoes

Washing, grading	(gross ton)	$ 7.74
	(net ton)	10.86
Packaging	(net ton)	8.06
Total	(net ton)	$18.92

*On farm labour rate $8.00 estimated compared to $14.50 per hour for B.C. Coast. Also, growers 4 and 5 (Table 8.1) time estimates dropped to make measurements more precise.

Table 8.2 illustrates that the potential savings by conducting some of the plant functions on the farm, even at the same hours per ton as the Co-operative, are significant. Net ton figures are dependent upon the cull rate, therefore in assessing wash and grade savings the gross charge may be more comparable.

If the washing and grading function performed on-farm could be done in 0.80 hours per ton (Table 8.1) as opposed to 1.19 person-hours at the Co-operative, coupled with a rate differential of $6.50 per hour, the savings could be $10.86 per ton. Even if the grower operated at the same time requirement as the plant, the savings would be $7.74 per ton.

QUALITY CONTROL OF FARM PACK

It is reasonable to assume that there will be a variation in quality and uniformity of pack among a number of grower packers. This is most likely to happen if there is no significant penalty for poor grading. As reported in Chapter IV, other agencies in British Columbia have developed systems to severely penalize growers who do not produce an appropriate quality of pack. This system includes the grower having to remove their product from the store or being charged back a cost for the poor grading. Interviews with the trade as reported in Chapter V, illustrate that the trade does not want to have to do these type of actions in the Lower Mainland where over 50% of the product is delivered to a central warehouse and then out to the store where the integrity of the individual grower package may be lost and the tracing of poor grading penalties would be most difficult.

However, the system used by other agencies and the Manitoba Board suggest that growers quickly learn the trades' standard and produce an acceptable product. The marketplaces will eliminate poor packers.

PACKAGING

The cost of packaging can become a significant capital cost to an individual grower as the reasonable minimum order quantity per package size is about 25,000 pieces for poly bags. Considering that the grower would have to stock 5, 10, 25 pound poly bags plus cartons or sacks, the cost can become significant. In particular, this cost can be significant if changes are required on the printing of the bag. One of the ways around this is for the Co-operative to supply bags which the grower could stamp with an individual grower number for identification and quality control purposes.

ADVANTAGES OF GROWER WASHING, GRADING AND PACKING

The following advantages may occur to the grower by doing on-farm processing:

- Products may have lower hours per ton;
- Labour rates should be lower than those at Co-operative; and
- The grower has greater control over the handling of his own product;

DISADVANTAGES

The disadvantages of on-farm processing include:

- Considerable outlay of capital for the grower;
- Time of the grower/operator in supervision;

- Hiring of suitable work staff;
- Cost and inconvenience of stocking packaging;
- More responsibility on the grower and less time for other growing functions; and
- Need to be prepared to pack the product on demand of the trade.

CONSTRAINTS TO AND POTENTIAL PROBLEMS OF FARM PACK IN THE LOWER MAINLAND

The constraints and potential problems of packing product on the farm in the Lower Mainland include:

- Capital costs and availability of equipment. If all Co-operative members decided to get into farm pack (as differentiated from washing and grading) at the same time, it is unlikely there would be sufficient used equipment available and many would have to turn to new equipment in order to set themselves up;
- The availability of appropriate labour may be a problem; and
- The availability of adequate water supplies and the ability to dispose of that water without excessive cost.

IX. CONCLUSIONS AND RECOMMENDATIONS

In this chapter, we present the conclusions of our research and the recommendations. Also, we present a plan of action to be undertaken by the Co-operative to implement change. The conclusions are printed in bold type with the discussion and recommendations following them.

1. **The market served by the B.C. Coast Vegetable Co-operative is not directly comparable with the market served by other agencies in B.C. Agencies on Vancouver Island and in the Interior deliver significant quantity of their product directly to retail stores and service very little of the food service trade. The B.C. Coast sells 55% of its product to retail chain wholesalers and 10% of its production to processors. The food service industry is a significant customer of B.C. Coast. The B.C. Coast's major customers indicated clearly that they do not want variability in the products that are delivered. These customers do not want individual store deliveries, as are done in other jurisdictions, and are not interested in picking up product directly from individual producers. However, they would consider the opportunity to choose individual grower/suppliers with whom they could contract their business.**

   This requirement of the customers effectively rules out the option of direct delivery of product from the farm to retail stores and curtails farm to wholesale delivery unless it is arranged in full loads as an exception to the rule. The concept of a customer choosing an individual grower or supplier could disrupt the co-operative marketing approach. However, it seems to work in Manitoba. The only producers that would be penalized by this system would be those not producing a satisfactory quality. If individual growers had their number or name on a package or container, their own quality would be identified by the buyer and this might lend itself to improving the overall quality of production as only the better producers will succeed in the marketplace.

2. **In general, customers expressed their satisfaction with the service, quality and reliability of most of the products from the Co-operative. The primary demand for products of the Co-operative is not increasing. Therefore, there is little opportunity to expand volume without changing the market presentation.**

   Management could identify niche or speciality markets that could provide opportunities for members to increase their financial returns from the market or expand the market for the products they produce.

Such opportunities might include specialty crops or varieties, or the production of organic and natural products. The latter development might lead to markets for export.

Management needs to identify the needs of the various customers such as specific varieties, custom packing, different packaging needs, special promotions, etc. and provide clear and timely information to growers such that they can plan to service these needs, where possible.

3. **The plant experiences considerable under-utilization during the off-season. Fixed costs do not decrease with less product but they are spread over less tonnage.**

Management should undertake a thorough review of food and non-food product opportunities that could be packed in the plant during the off-season. Such opportunities might include packaging or regrading of citrus fruits for retail customers, the packaging of nuts or out-of-season products from other jurisdictions. In the text we reported on the $100,000 contribution to bottom line profit that was reported to us by the Manitoba Vegetable Marketing Board for the repackaging of potatoes and citrus fruit. Prior to entering into a similar system of packaging import product, B.C. Coast would need to determine what margins could be generated by doing so, as price spreads on imported poly pack and bulk potatoes do not differ significantly in B.C.

We could not determine what sort of contribution to overhead could be created by repackaging product as there is a lack of a detailed costing system that could be applied to this endeavour.

4. **The processing crop market represents 10% of the volume of the Co-operative. Nalleys, in particular, may impose more stringent yield or cull rate guidelines on the product they are purchasing or may even consider relocating their production to another area.**

In order that growers are aware of any potential changes in this market, all processing potato growers should meet with Nalleys management to explore important issues such as: changes in varieties; grade-out rates; potential changes in corporate plans.

5. **The cull rate at B.C. Coast of 28% on potatoes is higher than Alberta and Manitoba where much of the culling takes place on the farm. Washington packers average 32% culls on Russets, however, they also sell their cull potatoes for approximately $40.00 per ton to processors. B.C. Coast does not realize any return for culls and sometimes has to pay to have them removed.**

The Co-operative urgently needs to find a buyer for cull potatoes. One company that was interested in processing cull potatoes would have paid $25.00 per ton for the product. At $25.00 per ton, the Co-operative would realize between $250,000 - $300,000 per year. This

would make a substantial contribution to the financial well-being of the organization. At the present time the company interested in processing those potatoes is attempting to raise financing to set up a plant. The Co-operative should use all of its influence to assist that company in getting financing.

6. **The efficiency of the Co-operative can be measured by the hours required per ton to wash, grade and pack. Using the example of potatoes, the B.C. Coast plant is not out of line with other jurisdictions considering the differences in operating procedures. The table below illustrates those findings.**

Efficiency of B.C. Coast vs. Other Jurisdictions
(Wash, Grade and Pack Potatoes)

Alberta	+ 5.2% more efficient
Manitoba	- 9.5% less efficient
Washington (avg.)	+ 10.6% more efficient
(3 Most Efficient)	- 12.8% less efficient

7. **The average plant labour rate, including benefits, of $14.50 per hour at the B.C. Coast is higher than in any of the other jurisdictions examined, as shown.**

Labour Rate B.C. Coast and Other Plants
$/Hour Including Benefits

	$/Hour	Difference from B.C. Coast $/Hour
B.C. Coast	14.50	
Alberta	9.66	- 4.84
Manitoba	12.36	- 2.14
Washington	5.02	- 9.48

As an example, at a $9.48 per hour premium over Washington labour rates, it costs B.C. Coast $22.11 per ton more to wash, grade and pack potatoes than it does at the more efficient Washington plants.

8. **Grower charges at the B.C. Coast were quite comparable to those in other jurisdictions. Charges for poly pack in Alberta were higher than for B.C. Coast. Even the charges in Washington state were reasonably close, particularly considering the higher labour rates in British Columbia. On average, B.C. Coast was 15.6% higher on grower charges for the B.C. standard pack compared to poly rates in Washington.**

As every jurisdiction has a different way of calculating charges and costs, it is often difficult to compare directly. However, one might anticipate considerably greater spread between B.C. Coast and

TABLE 9.1

B.C. Coast Vegetable Co-operative Association

Estimated Impact of Decline in the Volume of Potatoes Washed and Graded Centrally
For The Fiscal Year Ending June 30, 1990
Based On The Current Charge Allocation System And Volume Forecasts
Prepared by Management

% BELOW MANAGEMENT FORECAST	Tons Washed & Graded	$Revenue $35/ton	Net Tons[1] Just Handled	$Revenue ($11/ton)	Total Revenue ($)	Management Forecast	Revenue Shortfall (Impact)
10%	32,931	$ 1,152,585	2,744	$ 30,184	$ 1,182,769	$ 1,280,650	($ 97,881)
15%	31,102	1,088,570	4,166	45,826	1,134,396	1,280,650	(146,254)
20%	29,272	1,024,520	5,489	60,379	1,084,899	1,280,650	(195,751)
25%	27,443	960,505	6,860	75,460	1,035,965	1,280,650	(244,685)
30%	25,613	896,455	8,233	90,563	987,018	1,280,650	(293,632)
35%	23,724	832,440	9,605	105,655	938,095	1,280,650	(342,555)
40%	21,954	768,390	10,977	120,747	889,137	1,280,650	(381,513)
45%	20,125	704,375	12,349	135,839	840,214	1,280,650	(440,436)
50%	18,295	640,325	13,721	150,931	791,256	1,280,650	(489,394)

[1] Assuming a 25% average cull rate.

Assumptions: - current allocation system and charges
- farm washed/graded/packed, shipped from plant

V10/10

Washington State packers on grower charges considering the spread on labour rates. It should be noted that many of the Washington State packing houses concentrate on their own production rather than custom work. As we were not privy to the financial statements of those packing houses, we do not know at what stage during the integrated growing and packing operations they take their profit. As custom work is a small proportion of the work of most of the packers interviewed in Washington State, it is likely that the charges are not reflective of actual costs and more reflect of what they can get from the custom marketplace.

9. **The management information system is not adequate in its detail nor in the timeliness of reports. This area of administration needs a greater degree of automation in order to produce standard costing system information that is useful to management. As it now operates, it is difficult to isolate costs and charges by function or product.**

   The management information system, particularly cost allocations, needs to be more responsive and focused. Also, the costing information needs to be explained to members. They should utilize the services of their accountant to develop such a costing system.

10. **The Board of Directors represent the members' interest in setting policy for the Co-operative. During this period of industry concern and transition, the Board could be assisted in its deliberations by having specialized, experienced outside advisors.**

    The Board of Directors should consider adding two non-voting advisory Directors with specific experience in plant operations/manufacturing and in marketing. These Directors should have senior food industry experience but not necessarily in the vegetable industry.

11. **The level of grower/member dissatisfaction with their returns and the Co-operative's operations is very high. Potato grower members in particular expressed an urgent need for action and change.**

    Growers are highly frustrated with their financial situation and blame several issues including management, ineffective marketing and costly plant labour. Growers need more information on operating costs, management actions, market concerns and other matters that impact on them. Also, growers should be made aware of the type of research and industry support to which management devotes time. More information may allay some of the concerns of growers as they understand the reasons for decisions.

12. **Approval has been given by the Board of Directors to allow on the farm washing, grading and packing. With the sense of urgency and frustration of growers, it is likely that there will be an increase in the number of growers who decide to try farm pack but the costs of the change are not well known.**

TABLE 9.2

B.C. Coast Vegetable Co-operative Association

ACTION PLAN

Time Frame	Task	Responsibilities
(1) Immediately	Report study findings to members	Bd. of Directors/Mgt.
(2) 1-3 months	Grower seminar to exchange farm pack information	Management
(3) 1-3 months	Appoint advisors to Board of Directors	Bd. of Directors
(4) 3 months	Conduct grower referendum	Bd. of Directors
(5) 3-6 months	Analyze referendum results and plan changes (downsizing, moving, comparative costing, union discussions)	Mgt./Bd. of Directors
(6) 6 months	Make recommendations to growers	Bd. of Directors
(7) 3-6 months	Review all opportunities to add plant production, expand volume process new products	Management
(8) 3-6 months	Develop MIS improvements - communicate information to growers	Management
(9) 6 mo.-1 year	Implement new charges; cull surcharge: late charge	Management
(10) 6 mo.-1 year	Work with major customers to ensure support and good market intelligence	Management
(11) 6 mo.-1 year	Implement operating plan changes, including additional production	Management
(12) 1-5 years	Continue plan from Year 1	Bd. of Directors

13. If some growers choose to pack their product on the farm, then it will reduce the volume of product packed at the Co-operative. A reduced volume will spread the fixed costs over less product and may necessitate a reduction in staff, operations, plant size, or location, as costs increase.

There is a lack of good information concerning on-the-farm washing, grading and packing costs. It would be useful for growers who do become involved in farm packing to exchange information with each other on costs, problems and labour availability. The Co-operative could make it a condition precedent in permitting farm pack that growers who opt for this approach share their costing information with the Co-operative and other members.

In order for the management to plan their operations at the lowest cost and for the Board of Directors to determine policies on farm pack, it is imperative that the opinions and commitment of the members be attained. In order to do this, a carefully worded referendum of 100% of the membership is required in order to determine which growers intend to do farm packing and whether they intend to do washing and grading alone or also intend to pack their products. It is important that growers who opt to deliver their product to the Co-operative sign a contractual arrangement to commit themselves to this delivery. Without such a commitment, management cannot plan operation size and the cost will continue to rise.

Table 9.1 provides a summary of the revenue that would be lost by the Co-operative for the fiscal year ending June 30, 1990 from the various reductions in the volume of potatoes shipped to the plant in the case of increasing quantities handled on the farm. As indicated, even a 10% reduction in delivery would result in a loss of revenue of nearly $98,000, a portion or all of which would have to be covered by a surcharge, depending on the lead-time management would have to respond in order to reduce labour expenses on the washing and grading line.

14. Table 9.2 outlines our Action Plan, which summarizes our recommendations. The presentation of the study findings to the growers followed by a carefully worded referendum on grower plans is most important.

X. ALTERNATIVES AND MODIFICATIONS TO THE CO-OPERATIVE'S OPERATING SYSTEM

This chapter presents the various alternatives that we have identified that could be considered by the Co-operative in order to reduce costs or improve operations. The alternatives that we have identified are:

- **Alternative 1 - improve the effectiveness of the present system by implementing some or all of the following changes:**

  - minimum 24 hour ordering (except by exception);
  - work from inventory to pack orders;
  - set out and adhere to labour standards by product and report to management on a daily basis;
  - improve the management information system (operations, sales, accounting and product costing);
  - charge growers for culls beyond an agreed rate or pay a premium for loads with low cull rates;
  - penalize growers who fail to deliver on time, resulting in a loss of efficiency or down-time in the plant;
  - increase plant utilization by packing other products or similar products from other jurisdictions in the off-season;
  - continue the present operation but in a new site;
  - determine which growers want to do farm pack and confirm those who intend to supply the Co-operative with ungraded product over the next 5 years;
  - consider expanding the Board of Directors to include advisory members with experience in operations and marketing;
  - provide better information on marketing and financial issues to grower members on a timely basis;
  - allocate charges to processing potatoes but reflect the true cost of their utilization of plant capacity and add the share that is dropped from the processing potato charges to the other products going through the plant.

- **Alternative 2 - farm wash, grade and package all products then deliver to the central distribution point for sale to and pick up by wholesalers.**

- **Alternative 3 - farm wash and grade all products but deliver to the Co-operative for central packaging, distribution and sale.**

- **Alternative 4 - farm wash, grade and pack all products and deliver from the farm to the customers with coordination through a central sales organization.**

- **Alternative 5 - allow farm pack by any members while retaining central distribution and sales and Co-operative packing for those who do not want to do their own.**

The details of these alternatives are presented in Tables 10.1 through to 10.10. In these tables, each alternative is discussed under the headings: Changes to the System; Reasons; Benefits; Costs and Concerns; and Actions Required and By Whom. Also, these tables outline the probable cost savings of implementing the alternatives.

REVIEW OF THE

PACKING AND MARKETING SYSTEM

FOR THE BRITISH COLUMBIA

VEGETABLE INDUSTRY

SEPTEMBER 1989

AGRI-FOOD REGIONAL DEVELOPMENT SUBSIDIARY AGREEMENT

Canada

BC

REVIEW OF THE PACKING AND MARKETING SYSTEM FOR THE BRITISH COLUMBIA VEGETABLE INDUSTRY

SEPTEMBER 1989

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APPENDIX 1 - B.C. Coast Vegetable Co-operative Association
Grower Survey Questionnaire

APPENDIX 2 - B.C. Coast Vegetable Co-operative Association
Customer Survey Questionnaire

APPENDIX 3 - B.C. Coast Vegetable Co-operative Association
Direct Cash Costs for Washing & Grading, Receiving, Shipping and Packaging On a Net Ton Basis - 1986-1988

APPENDIX 4 - B.C. Coast Vegetable Co-operative Association
Total Costs by Crop and Function
Fresh Market Products - 1986-1988

APPENDIX 5 - List of Contacts

I. INTRODUCTION

BACKGROUND

The B.C. Coast Vegetable Co-operative Association (BCCVCA or Co-operative) is located in Richmond at a facility built in 1959. The Co-operative provides complete handling facilities from receiving of ungraded product to sales and destination delivery.

The Co-operative markets regulated products at current market values and provides the producer a net return from monthly sales pools after subtracting the costs of operation of the plant, administration and sales. The organization does not receive a sales mark-up in respect to sales value but is entitled to deduct the charges for services as authorized by the Co-operative's Board of Directors and the B.C. Vegetable Marketing Commission. Although the Co-operative attempts to maximize the price of the vegetables that they sell and hence the growers' return, they have to be price competitive with products imported from other jurisdictions.

The B.C. Vegetable Marketing Commission is empowered under the Natural Products Marketing Act to regulate the packing, distribution and marketing of specific vegetables in British Columbia. These products are known as regulated products. Although the Commission establishes prices for products within its jurisdiction, it cannot place restrictions on similar products produced in areas beyond the jurisdiction of the Commission, nor on products imported from other provinces or other countries. Therefore, the pricing of the local product is subject to and determined by the marketplace.

Regulated root crop products are presently marketed through 5 agencies licensed as the sole selling agencies by the Commission:

- B.C. Coast Vegetable Co-operative Association;
- Interior Vegetable Marketing Agency Co-operative;
- Island Vegetable Co-operative;
- Port Potato Company; and
- Vancouver Island Produce.

The B.C. Coast Vegetable Co-operative Association and the Port Potato Company provide full grading, washing, sizing, packing and pre-packaging, and marketing services for the member companies. The Island Vegetable Co-operative in Victoria has facilities to provide these services, however the majority of their root crop vegetables other than potatoes, are washed, graded and packed on the farm. All of the agencies act as sole selling desks for their members.

PURPOSE OF THE STUDY

The marketing of vegetables in British Columbia is conducted in a number of different ways depending upon:

- The area of the province;
- The organization of the growers; and
- The commodities grown.

The costs of washing, grading, packaging, sales and distribution have become increasingly significant in the marketing of fresh vegetables and are conducted differently by the different agencies of the Commission.

In order that the members of the B.C. Coast Vegetable Co-operative Association receive an adequate return it is important to be aware of whatever alternative methods of handling and marketing might exist that could reduce the

operating costs of the Co-operative and improve the growers' return. Consequently, the Co-operative retained Western Management Consultants in March 1989 to undertake a review of the operations and marketing systems of the organization.

OBJECTIVES AND SCOPE

The overall objective of the study is to review the various approaches available for the packing and marketing of potatoes, carrots, onions, rutabagas, beets and parsnips as produced by members of the B.C. Coast Vegetable Co-operative Association and to recommend alternatives that would result in improved returns to growers. To accomplish this objective, we addressed the following issues:

- A review of existing marketing systems for root vegetables as used by the various agencies in British Columbia including grading, washing, packaging, shipping, sales and distribution;
- For each of the above functions, costs were to be analyzed including labour, equipment, packaging, building, real estate, overheads and other operating and capital costs as pertinent;
- In comparative systems, costs of performance were to be assessed for similar functions performed by major competitors in Washington and Alberta and any other jurisdictions that are agreed to with the client;
- The cost effectiveness of growers performing certain levels of pre-grading prior to shipping to a central grading and packaging facility for potatoes and other root crops were evaluated; and
- An assessment of alternative methods of marketing operations that would result in cost savings to the grower or maintaining a high level of acceptance by wholesalers, retailers and the hotel, restaurant or institutional food sector were to be evaluated.

Recommendations, alternative marketing strategies and attendant costs are made for the 5 and 10 year timeframes.

APPROACH

In undertaking the study, we completed the following steps:

- Reviewed available reports on the B.C. vegetable industry and other jurisdictions;
- Conducted a detailed review of the financial, operating and sales data of the Co-operative for the past 3 years;
- Interviewed key personnel of the Co-operative including the General Manager, Controller, Marketing Manager, Sales Personnel, Plant Personnel Supervisors and two Plant Foremen;
- Conducted detailed interviews with 32 grower members of the Co-operative;
- Interviewed the General Managers of the other 4 agencies licensed to market root crop vegetables in British Columbia;
- Conducted interviews with 13 vegetable growers on Vancouver Island, in the interior of the province and elsewhere who perform some or all of washing, grading or packing on the farm;
- Conducted interviews with 12 trade representatives in British Columbia including the major retail/wholesale grocery chains, general produce wholesalers and specialty food service wholesalers;
- Interviewed 19 vegetable packing operations and marketing boards in Alberta, Washington, Manitoba and Ontario; and
- Based on the above, we evaluated and reported on alternative operating and marketing systems with their attendant costs. Also, we have made recommendations on alternatives available to the B.C. Coast Vegetable Co-operative Association.

LIMITATIONS OF THE STUDY

We have followed the Terms of Reference as set out by the Co-operative in conducting our study. Certain specific tasks that were not requested and have not been undertaken include:

- A review of in-plant operating efficiency or labour efficiencies. This type of review could only be done throughout the season while the plant is in operation as labour efficiencies will change by crop, timing, volume and other factors;
- A review of the individual performance of any employees. Therefore we cannot comment upon the effectiveness of the individuals; and
- Audits of the accuracy of the cost or efficiency data provided by interviewees from other agencies or jurisdictions. Therefore, the data collected should be considered as "best estimates".

The detail and precision of data from other agencies, boards and packers was not as good as we would have preferred. Other organizations often did not have data in the format or depth that was required. We had to use judgement in the acceptance or rejection of some data.

THE REPORT

The following chapter describes the vegetable marketing system in British Columbia. In Chapter III we present the results of our survey of members of the Co-operative. The opinion of major customers of B.C. Coast are summarized in Chapter IV. In Chapter V a financial and operational review of

the Co-operative is presented with an analysis of cost elements in the following chapter. Comparative marketing systems in other jurisdictions are discussed in Chapter VII, including a comparison of costs and charges. The alternatives of on-farm packing are presented in Chapter VIII. In Chapter IX we present our conclusions and recommendations followed by alternative strategies in Chapter X.

The appendices contain:

1. Grower Survey Questionnaire;
2. Customer Survey Questionnaire;
3. Direct Cash Costs for Washing, Grading, Receiving, Shipping and Packaging;
4. Total Cost by Crop and Function;
5. List of Contacts.

It is important to note that all financial numbers in this report are in Canadian dollars (U.S. converted at current rate of $1.18 Canadian = $1.00 U.S.)

II. VEGETABLE MARKETING SYSTEMS IN BRITISH COLUMBIA

To understand alternative approaches to the operating and marketing of vegetable agencies in British Columbia, we interviewed the managers of all 5 vegetable marketing agencies and a selection of the grower members. For comparable purposes Table 2.1 presents data on the volumes of crops packed as of June 30, 1988 (the latest information from the B.C. Vegetable Marketing Commission). A detailed comparison of these agencies is illustrated in Table 2.2. Costs and charges of these agencies are discussed in Chapter 7.

TABLE 2.1

ANNUAL PRODUCTION BY AGENCY*
AS OF 06/30/88
(GROSS TONS)

	Beets	Carrots	Parsnips	Potatoes	Onions	Rutabagas
B.C. Coast Veg. Co-op.	266	6,179	177	44,778	4,617	1,152
Interior Veg. Mkt. A.	2	415	-	5,850	1,208	550
Island Veg. Co-op.**	98	1,797	75	5,255	547	261
Port Potato	-	41	-	689	-	1

* data from B.C. Vegetable Marketing Commission
** Island Vegetable Co-operative since split with 18 growers forming Vancouver Island Produce

B.C. Coast Vegetable Co-operative Association

B.C. Coast Vegetable Co-operative, the largest agency in the province, handles products from the Fraser Valley area. The Co-operative receives all of the beets and fresh market potatoes (except for new potatoes), most of the rutabagas and onions and three quarters of the carrots in bulk for washing, grading and packaging. All of the parsnips, 10% each of onions and rutabagas and the remaining carrots are washed and graded at the farm. Agency

Table 2.2
COMPARISON OF VEGETABLE MARKETING AGENCIES IN BRITISH COLUMBIA

AGENCY & CROPS	SERVICES PROVIDED	STAFF	CUSTOMERS	AGENCY CHARGES 1988 (see Appendix)	DELIVERY	ORDERING/LEAD TIME	QUALITY CONTROL	COMMENTS
B.C. Coast Vegetable Co-operative Assn. - potatoes - carrots - onions - beets - rutabagas - parsnips	- Receiving - Washing - Grading - Packaging - Selling (all products) - Administration - Processing potatoes (some some farm pack, may wash/ grade, weigh, invoice		- Produce wholesalers - Retail grocery wholesale - Food service wholesale processors	$/Ton Delivered Wash/Grade; $/Ton Sold[1] Agency Fee, Other Potatoes standard 33.00 11.50 12.60 count 35.00 11.50 29.60 white spot 32.00 10.50 0.40 Nalleys - 10.50 0.40 Beets 60.00 11.50 17.40 Carrots 60.00 11.50 17.40 Onions 40.00 11.50 20.90 Rutabagas 38.00 11.50 17.40 Parsnips 62.00 11.50 25.40	- Products picked up at plant by customer priced FOB dock. - Nalleys weighed at plant and delivered by grower.	- Accept same day ordering and delivery.	- Parsnips and portion of rutabagas farm packed - controls by grower/trade. - Other products quality controlled at plant (central operation)	- 55% of sales to 3 major retail chains - they pick up and distribute to stores. - Unionized work force.
Interior Vegetable Marketing Agency Co-operative - potatoes - carrots - onions - beets - rutabagas - parsnips - greenhouse	- Central selling desk only takes orders and informs growers on rotational basis. Grower packs and delivers to store. - Collects invoice and pays grower. - Starting to order packaging to supply growers.	3	- Produce wholesalers - Retail grocery stores/ wholesale - Food service direct sale by grower	$/Ton Sold; % Potatoes early 6.25 On all crops add 3% of net payout late 4.50 process 3.50 Beets 7.25 Carrots 7.25 Onions 6.00 Rutabagas 7.25 Parsnips 7.25	- Charge/shipment to customer. - Some growers deliver for others. - Delivery arranged by co-op.		Few problems. - Quality claims charged directly to grower.	- Manager contacts all individual stores twice weekly by phone. - Growers commented on inconvenience of doing own pack and delivery. - System necessary because of few growers and customers over wide area. - 47 members/100 growers suppliers.
Island Vegetable Co-operative Assn. - potatoes - carrots - onions - beets - rutabagas - parsnips - salad vegs - other	- Has central wash/grade/ pack facility - mostly used for potatoes (one member does own potatoes). - Central order/selling desk and receives/ships all orders (occasional exceptions). - Sells packaging materials to members.	3	- Produce wholesalers - Retail grocery stores/ wholesale	$/Ton Delivered Wash/Grade; $/Ton Sold Agency Fee, Other Potatoes 39.00 10.00 0.80 Beets 57.00 30.00 0.80 Carrots 61.00 30.00 0.80 Rutabagas 43.00 30.00 0.80 Parsnips 67.00 30.00 0.80	- FOB plant or $15/pallet delivery.	Accept same day ordering and delivery.	- Some quality variation among farm packed products.	
Vancouver Island Produce - potatoes - carrots - cabbage	- Central selling desk only takes orders, informs growers on rotational basis, invoices, pays growers, checks product quality.	2.5	- Retail grocery stores direct - Food service direct by growers	Agency fee $22.00/ton of product sold.	Delivered to retail store by grower. Some growers deliver for others.	- Two days lead time farm to store.	- Manager conducts regular store checks. - Any poor product grower must pick up and remove from store.	- Very new organization. - 18 members
Port Potato Company - potatoes	- Wash, grade, pack, sell. - Only one grower.	2	- Retail grocery stores - Food service	Only handles own product. No charges, costs are presented in Chapter 8.	Delivers to stores.	- Same day service.	- Responsive to store complaints.	

[1] Other charges include those for: containers, claims and overages, promotion, special services; and research

charges are designed to recover the costs of the various operations by product. This Co-operative also negotiates the contracts of processing potatoes to White Spot and Nalley's. Some growers pre-grade and wash the potatoes shipped to White Spot. Potatoes supplied to Nalley's may be delivered directly by the grower after weighing at a public scale or may be weighed at the Co-operative, prior to delivery. No washing or grading functions are performed by the Co-operative on potatoes for this customer.

The B.C. Coast Vegetable Co-operative does not deliver directly to retail stores but sells to vegetable wholesalers, retail grocery wholesalers, food service wholesalers and potato processors. Product is picked up at the plant and is priced fob the plant dock.

The marketing strengths of the organization include the ability to provide a consistent supply of product and the centralized control over product quality, sales and customer relations. The price to be paid by the grower for this strength is the fixed cost of the facility and relatively high cost (compared to farm labour) of unionized plant personnel.

A major advantage to the members is that the plant offers all the facilities necessary to handle the product after it leaves the farm gate. Growers can focus their efforts on on-farm production rather than on all the functions required to access the market.

Interior Vegetable Marketing Agency Co-operative

This Co-operative acts strictly as a central selling desk and has no warehousing or processing facilities. The Co-operative takes orders from retail

or wholesale customers and informs the individual growers on a rotational basis. The growers pack the product and the IVMA arranges delivery directly to the store, conducts the invoicing and pays the grower. The Co-operative has recently started to help growers by ordering packaging supplies as the minimum economic order size of 25,000 bags is a problem for many members.

The Agency charges a set fee per ton per crop (adjusted to cover anticipated costs annually) plus 3% of net payout. Any excess revenue is rebated to growers annually, although this rebate has not been significant recently.

The IVMA or the grower arranges for delivery of the product directly to the wholesaler or retail store by independent truckers or through growers who may deliver their own or others' product.

Any quality claim by stores are charged back directly to individual growers.

The advantage of this system is that the costs of operating are minimal because there is limited investment in a plant or warehouse. The disadvantage is that it takes time from the growers' job of producing the product to wash, grade and package it and then to arrange for delivery. Each of the growers interviewed felt that a centralized plant to wash, grade and pack would be more convenient to them as they would not have to devote their efforts to operating and staffing a packaging operation. However, they expressed the opinion that the widely dispersed marketplace and location of growers in the Interior did not lend itself to the operation of one centralized facility.

Island Vegetable Co-operative Association

This Co-operative in Victoria handles approximately 8,000 tons of product a year of which 1,500 tons are potatoes. Although this Co-operative has a central washing, grading and packing facility, it is used mostly for potatoes while other products are farm packed. One member farm packs his own potatoes. The Co-operative acts as a central ordering and selling desk and receives and ships all orders of its members. The only exception to central pickup from the Co-operative is occasional emergency requirements of customers. The Co-operative sells packaging materials to its members.

The Co-operative charges a flat $30.00 per ton agency fee for all products that it sells and also has a charge per ton of delivered product for anything that is washed and packed in the plant. (Table 2.2).

The plant personnel indicated that there are usually some quality variations amongst farm packed products and this does create a problem with retail customers.

Vancouver Island Produce

This new Agency located in Nanaimo has 18 members on the central to north central portion of Vancouver Island. This Agency acts strictly as a central selling desk and takes orders from retail grocery stores and informs its growers on a rotational basis. The Agency invoices customers and pays the growers. The Agency sells to retail grocery stores and wholesalers while the food service industry is handled directly by growers.

The Agency fee is a flat $22.00 per ton of product sold. The fee covers the cost of the manager plus one and one half office staff. With the office housed in a portable trailer unit, overhead is low.

Quality control is maintained by the manager conducting regular store checks and any poor product or complaints received from the retailer entail the grower to pick up and remove the product from the store. Growers do their own delivery to the retail stores. The grower usually discards returns rather than regrading it.

Port Potato Company

This Agency packs and sells potatoes from one grower in Port Alberni. When the Agency runs out of product or requires product that it does not have in stock, it will buy from other agencies of the province. Port Potato Company washes, grades, packs and sells 6-700 tons of potatoes and 40 tons of carrots, mostly to the retail and food service industry in the Alberni Valley.

The Manager of Port Potatoes estimated that his washing/grading and packaging equipment cost less than $5,000 to build. He spends about 3 hours per day on these functions and the remainder on sales, delivery and farm production. He estimates that with one person, they can wash and grade 2 tons per hour and package 1 ton per hour.

III. SURVEY OF B.C. COAST VEGETABLE CO-OPERATIVE MEMBERS

This chapter of the report summarizes the opinions expressed during in-person and telephone interviews with members of the B.C. Coast Vegetable Co-operative Association.

SURVEY APPROACH

The original work plan proposed for the study indicated that we would send a survey to all members of the Co-operative. At the request of the Steering Committee, we modified the work plan to include in-depth interviews with 30 growers instead of the survey of all members. To obtain a reasonable overview of the opinions of growers, we selected growers from various locations as well as growers with varying sizes of operations. In addition, we interviewed both non-diversified (primarily potato producers) and diversified growers (producers of other crops).

We then prepared a questionnaire to be used by the interviewer in a semi-structured, informal manner. This approach was selected as the optimum means of providing the opportunity for members to present their most pressing views in an unconstrained manner. The questionnaire used informally is included as Appendix 1.

This questionnaire provided a general framework for the interview rather than a detailed data collection tool. Accordingly, the information recorded was not amenable to tabulation on a question by question basis but was grouped and analyzed by three major categories: concerns with the present system and the Co-operative specifically; desire to farm pack; and suggestions

TABLE 3.1

B.C. Coast Vegetable Co-operative Association

Summary of Grower Opinions

GENERAL CONCERNS	% OF MEMBERS SURVEYED
Costs are just too high	100%
Competition from producers in other areas	38%
Ability to compete in a free-trade environment	3%
CONCERNS SPECIFIC TO THE CO-OPERATIVE	
High cost of union wages relative to value of products handled by Co-op	52%
Lack of aggressive selling and pro-active marketing efforts	45%
Lack of assertive/effective general management	41%
Inconsistency of grading	14%
Lack of efficiency in plant layout/ plant operations	14%
Lack of easily understood financial and cost data	14%
Inefficient scheduling of grower deliveries	13%
Limited market feedback mechanism, ie. what should I grow?	10%

V10/10

for improvement. When analyzing the data, we compared the responses of potato producers to those of diversified growers. We also compared the opinions of growers from different locations.

NUMBER AND TYPE OF GROWERS SURVEYED

In total, 32 growers were interviewed. The breakdown by location of operation was as follows:

- 15 from Delta;
- 10 from Surrey;
- 2 from Richmond;
- 4 from Westham Island; and
- 1 from the Fraser Valley.

Of the total interviews completed, 29 were conducted in-person and 3 were conducted by telephone.

Eighteen of the growers (56%) relied primarily on potato production while the remainder were diversified producers.

SURVEY RESULTS

Table 3.1 summarizes the concerns of growers regarding the present handling and distribution of the crops they produce while the following paragraphs highlight the key findings indicated in Table 3.1. We have categorized these concerns into two groups: general and those specific to the operations of the B.C. Coast Vegetable Co-operative Association.

The data in Table 3.1 have been aggregated to represent the opinions of all the growers surveyed. Where particular concerns were expressed more

frequently or urgently by growers in different locations or by producers of particular crops, we have described those patterns in the following paragraphs.

General Concerns

As indicated, virtually all growers expressed the opinion that the costs of producing and marketing their products are too high relative to the value that they obtain from the marketplace. While all growers expressed this concern, it appears that potato growers are experiencing the most urgent cost-price squeeze, particularly producers in Delta where there is heavy clay soil that can adversely impact the appearance of the potatoes grown there.

According to the growers surveyed, the cost-price pressure is the result of both increasing on-farm production as well as handling and marketing costs. This cost-price squeeze is seen by several growers as a factor which will continue to exacerbate quality control problems, particularly for potato producers. Faced with effective yields that are half what Washington State producers can generate, local producers are encouraged to push their land "hard" to increase volume output such that crop rotation is minimal with a consequent decline in soil conditions and a further deterioration (relative to competing product from Washington State) in the quality, and returns, of potatoes marketed.

As indicated in Table 3.1, 38% of growers believe that one of the major problems facing the industry is competition from lower-cost producers. This concern was most frequently expressed by potato growers but was also noted by producers of other crops.

Concerns Specific to the Co-operative

Fifty-two percent of the growers surveyed indicated that the cost of union wages are too high relative to the market value of the goods produced. While these growers indicated generally that the wages earned by the union personnel are not exorbitant relative to living costs in the Lower Mainland, they believe that the agricultural commodities handled by the Co-operative do not command prices that can support the wages and benefits paid to plant personnel.

The second most pressing concern which growers expressed regarding the operations of the Co-operative related to the perceived intensity of the selling and marketing activities undertaken by Co-operative personnel. As shown, 45% of survey respondents indicated that they perceived the sales staff to be less assertive and pro-active than is required in a competitive market. Of the growers surveyed, 10% indicated that Co-operative provides limited pro-active market feedback data regarding the types and quantities of specific products that can be sold and should, therefore, be produced.

Forty-one percent of growers perceive that the management of the Co-operative is not sufficiently assertive such that the plant is not operated to maximum efficiency. In addition, 14% of growers indicated that the delivery schedule to the Co-operative is not efficient. A major factor identified by these growers that contributed to this inefficiency was the lack of disincentives for growers who arrive late or fail to deliver on time.

A quarter of the growers, however, indicated that they perceive that the management of the organization is constrained by the union agreement in the flexibility that can be employed in staffing the plant with the result that there are limited opportunities to realize economic savings at the facility. From the perspective of these growers, management is doing the best they can do within the constraints of the system.

Several growers (14%) noted that the layout of the existing plant is inefficient and results in excessive handling of product.

Another area of concern with respect to the current operations of the Co-operative was that the financial statements are confusing. Thirteen percent of respondents indicated that this was a concern.

Unlike the general concerns described previously, there were no major differences between growers of different products or different areas with respect to concerns regarding the Co-operative.

Desire to Farm Pack

In analyzing the desire of growers to farm pack, we aggregated the responses obtained from 30 growers rather than the 32 persons interviewed. The remaining two producers grow no commodities that are not currently farm-packed.

As shown, 25 of the 30 (83%) growers indicated that they do not want to farm pack. The major reasons expressed for this reluctance are as follows:

- Anticipated or feared difficulty in accessing reliable, inexpensive labour;
- Perceived "hassles" of assuming the responsibility on farm, such as the additional management time required to oversee washing, grading and packing functions;
- Perceived high cost of investing in equipment and buildings that are required to do a good job;
- Potential adverse impacts on selling prices because of inconsistent quality being shipped by growers; and
- Uncertainty regarding the actual cost savings that may be achieved.

While these growers did not wish to farm pack, they expressed a strong desire for significant reductions in handling and marketing costs. Generally, these growers indicated that they desired a minimum of a 30% reduction in the charges incurred by using the Co-operative to achieve acceptable returns for their efforts. This expressed level of savings is significant and though it may represent the views of some growers only, it does indicate a strong desire for change.

If these savings cannot be achieved by the co-operative system, the majority (22 of 25) of these growers would contemplate either farm-packing themselves or sending their product for custom-grading to other growers. In the absence of a central facility where custom services could be purchased, 3 of the 16 growers opposed to farm pack indicated they would likely cease production. All these growers were potato producers.

Generally, potato producers expressed a more urgent need for cost reductions than vegetable growers. Carrot producers comparatively indicated a stronger reluctance to farm-pack because of the greater labour input required to

wash, grade and pack carrots for the fresh market. Because of the lack of city water services, growers in Surrey expressed more reluctance to farm pack than producers in Delta.

Of the 32 growers contacted, 5 indicated that they would prefer to farm pack because they believe it is cheaper and that this approach would provide more direct market feedback to growers. These producers were all potato growers in the Delta area.

All 30 growers indicated that the packaging of product (as separate from washing and grading) for the fresh market is the function that they would least want to undertake on the farm. The 5 growers who expressed a preference to farm pack expressed less reluctance to package fresh market product than the other 25 producers who indicated they did not want to farm pack.

Suggestions for Improvement

The growers suggested a variety of actions to improve the marketing and distribution of the crops handled by the Co-operative and, ultimately, the returns realized by producers.

We categorized these suggestions into three areas: marketing; operations and other as shown below:

a) Marketing

All the growers contacted believe it is vital to maintain a central selling desk but expressed uncertainty regarding whether or not a central plant and/or warehouse should be maintained.

The major suggestions offered by growers to improve the effectiveness of the marketing function were:

- Strengthen the marketing expertise at the Co-operative and provide growers with more direction as to what products should be produced;
- Increase the production of processing potatoes because these can be handled easily and cheaply on the farm and yield a higher return to growers irrespective of lower market prices;
- Develop markets for cull products;
- Employ more aggressive sales personnel on a commission-based compensation system; and
- Lobby the government for assistance to fund a major consumer awareness program to "Buy B.C." products.

b) Operations

The majority (29 of 32) of the growers expressed uncertainty as to when, and what action, should be taken with the existing plant, e.g. should it be sold and a new one built? Generally, growers expressed a desire to support central operations in a privatized facility but believed that the existence of the union contract may preclude this option.

The following suggestions were made to improve the efficiency of centralized operations, regardless of whether these are located in the exiting or a new facility:

- Establish tight delivery schedules and impose penalties for lack of compliance;
- Encourage new growers to send product to the Co-operative;
- Increase the volume of product handled at the Co-operative;
- Enhance the direction provided by management to the personnel in the plant;

- Reduce, where possible, time lost in plant set-up time; and
- Improve the efficiency of the packaging operations.

c) Other

As indicated previously, 13% of growers indicated that they found the financial statements and charge allocation system confusing. These growers suggested that summary statements for each crop year be provided that would indicate their shipments, sales and settlement tons and values and that charges be provided for each function.

During the interviews, growers expressed uncertainty regarding how the marketing and distribution system should be managed during this period of transition in which farm pack has been approved in policy but no change plan prepared to guide the operations of the Co-operative.

SUMMARY

While the majority of growers would not choose to farm pack, all growers believe that explicit actions are required to improve their returns. Farm pack is the approach which appears most readily available to the growers and is most frequently identified as an alternative to the present system. There appears to be a greater interest among growers for undertaking washing and grading functions on the farm than there is for assuming fresh market packaging and warehousing responsibilities.

Because their expressed need for change is greatest, potato producers appear more likely to ch to washing and grading on farm in the immediate

term than carrot producers. Among potato producers, processing potato growers express the most urgent need for change.

Fundamentally, the majority of growers prefer a centralized facility but increasingly fewer will be willing to support the Co-operative with the existing cost structure. There is a high level of interest in supporting a privatized, centralized facility that operates with cheaper labour than the Co-op presently has access to.

To entice growers to continue to support the Co-op, significant reductions in the charges to growers must be realized through cost savings at the facility and/or more intense utilization of the facility such that administration and other fixed costs are spread over a larger volume of product. Given that there is unlikely to be a significant expansion in the quantity of regulated product produced in the short-term, more intensive utilization can only be realized by using the Co-op's assets for the handling of other products, e.g. packaging oranges in the off-season.

These opportunities must be identified by management as soon as possible and acted on. If profitable opportunities do not exist, however, there will continue to be changes to the Co-op system such as: possible declines in the quantity of regulated products planted; increases in the proportion of regulated products handled on the farm; and increased impetus for the appointing of a new agency by the Commission to provide centralized functions to growers.

IV. SURVEY OF B.C. COAST CUSTOMERS

To assess the opinions of representatives of the retail, wholesale and specialty trade regarding the perceived quality of product purchased through the Co-operative and likely changes in purchasing volumes resulting from anticipated changes in demand, we conducted personal interviews with a sample of the major customers of the Co-operative. In total, we conducted 11 interviews. Appendix 1 contains a sample of the questionnaire used.

From these interviews, we also solicited their opinions regarding their willingness to support any changes to the current distribution and marketing system. The following paragraphs summarize our findings and conclusions.

PERCEIVED PRODUCT QUALITY

The perception of the quality of product purchased from the Co-op varied by crop as described below.

Potatoes

All the customers interviewed purchase potatoes from both B.C. and other sources. The major source of origin of imported product is Washington State. The reasons for purchasing from Washington are that potatoes grown there are consistent in size, of superior quality and price-competitive.

Major wholesalers serving the retail segment purchase 50% to 60% of the potatoes they sell from the Co-operative. In comparison, smaller wholesalers serving the HRI trade buy proportionately less of their requirements from the Co-operative (10% to 20%) because they require consistently high quality, count-sized potatoes which can be sourced more readily from Washington. Also, the HRI sector demands a long, smooth "baker" shaped potato rather than a round or mishapen product.

All wholesalers handling fresh market potatoes and HRI potatoes rated the quality of potatoes as lying between poor and acceptable. Several questioned the competitive rationale of producing russet potatoes in the Lower Mainland when the quality of local product lags significantly below that of imported potatoes. These individuals indicated that the Co-operative should encourage members to grow greater quantities of red and white varieties because locally-grown potatoes of these types demonstrate a higher level of quality than locally produced russets.

Processing

Whitespot rated the quality of processing potatoes as acceptable although they observe quality to vary greatly by grower. Whitespot would prefer to handle only product grown by certain farmers.

The management team at Nalley's indicated the quality of local potatoes is often poor and that in future, the company will accept a cull rate of no greater than 3% and will be more stringent in rejecting loads. At the present time, cull rates vary greatly by grower, with rates ranging from 6% to as high as 18%. This company is taking an aggressive approach to marketing and

cost control because this approach is critical to survival of the industry in B.C. which must compete with lower-cost plants south of the border and in Alberta. Within 4 to 5 years, Nalley's will likely build a new plant. Management will compare the costs of locating in several locations, including British Columbia, Alberta and Manitoba.

Onions

Wholesalers serving the fresh market rated the quality of onions as ranging between good and excellent. Representatives of the HRI trade varied in their opinions ranking the quality as being unsuitable to excellent. Some customers require a milder-tasting, more easily-peeled onion than is presently handled by the Co-operative whereas others prefer the stronger-flavoured B.C. product.

Carrots

Purchasers reported wide variations in buying patterns with respect to sources of origin for imported carrots. The most common product type that is imported consists of snap-top carrots. When in season, most purchasers rely primarily on local carrots. Wholesalers rated carrot quality as acceptable to good.

Other Products

Customers rated the quality of locally-grown rutabagas as excellent. They have observed a trend, however, towards less consistency in quality as more farm-packed product has been made available. Wholesalers reported that the quality of parsnips is highly variable.

FOOD SERVICE SECTOR

The food service (hotel, restaurant and institutional) sector is a growing area of the food industry, representing approximately 35% of the dollars spent by consumers on food or 15% of the food volume consumed. Purchasing patterns differ among types of establishments from fast food to "white table cloth" restaurants and fast food restaurants generally use prepared products such as frozen or fresh french fries and cole slaw. Many restaurants want pre-peeled fresh potatoes, carrots, etc. This sector is served by wholesalers who prepare these products either from B.C. or other sources. Except for baker potatoes, HRI wholesalers generally found B.C. product to be satisfactory. In order to ensure that the correct varieties are grown and that the products are handled correctly, sales staff of the Co-operative should maintain close communication with food service wholesalers.

PLANT LOCATION AND PICKUP

All of the wholesalers contacted indicated that their willingness to purchase from the Co-operative was not affected by the location of the plant. They would not consider altering their purchasing patterns if the location was changed, even if the plant was adjacent to other co-operatives.

The majority of wholesalers picked up during the morning. Several wholesalers place orders for pickup the same day. Some could plan a week in advance, others were satisfied with planning a day before order pickup. Most wholesalers picked up in their own trucks. The size of orders varied from 4 to 5 pallets to an entire semi-trailer. The frequency of pickup varied from daily to 3 or 4 times a week.

ALTERNATIVES TO THE PRESENT SYSTEM

A number of alternatives were discussed with the wholesalers to determine their reaction to any potential changes. There was extremely limited support among fresh market wholesalers for the farm-packed product. In addition, wholesalers were not interested in picking up product from individual farms.

In general, the trade indicated they support a central distribution system. It was very clear from the interviews that the trade did not want to get into the type of situation that they have on the Island and in the Interior wherein any quality control problems are identified at the store level with some sort of a charge back to the grower. While these are the same buyers who support other systems in outlining areas, they noted that these areas constitute a small portion of their sales and the disruptive impacts of direct store delivery are, therefore, less significant than would be the case in the Lower Mainland.

There was some acceptability to having washing, grading and packing done the farm and the product delivered to the wholesaler but only on the condition that the product quality and reliability did not decrease from existing standards. Generally, the wholesalers expressed skepticism as to the likelihood that this standard would be maintained if products were farm-packed. There was a serious concern amongst the trade that there will be a decline in product uniformity if the industry moves to totally farm-packing. If this occurs, the trade will likely try to contract directly with the best quality

producers. This preferential buying pattern could disrupt the established marketplace and lead to competition among the growers. Such competition may weaken the co-operative approach but may also improve product quality through competition and reduce the incidence of poorer quality production.

GENERAL COMMENTS FROM THE TRADE

The trade in general expressed satisfaction with the relationships they have with the sales staff of the Co-cperative. With the exception of one wholesaler, these customers indicated that the sales staff maintain regular communication with them.

Some suggestions from the trade were that the Co-operative could consider providing incentives for certain volumes of product measured in pallet loads or tonnage or truck loads as is done in Manitoba. The trade also suggested that the Co-operative should explore the market for organically-grown products because the prices of such items are much higher than regular product. (The trade were not clear in their definition of organic but could include pesticide free or the use of organic fertilizers.) It is beyond the scope of this study to measure the costs and benefits of such market development but warrants further assessment by the marketing staff of the Co-operative.

Some of the trade commented that the B.C. growers should concentrate more on the red and white potatoes rather than trying to grow russets which they cannot grow as well as those produced in Washington State.

Some of the trade commented that they would consider having product custom packaged under their own labels by the Co-operative. This might lead to an opportunity to package greater volume through the plant of non-traditional or regulated product.

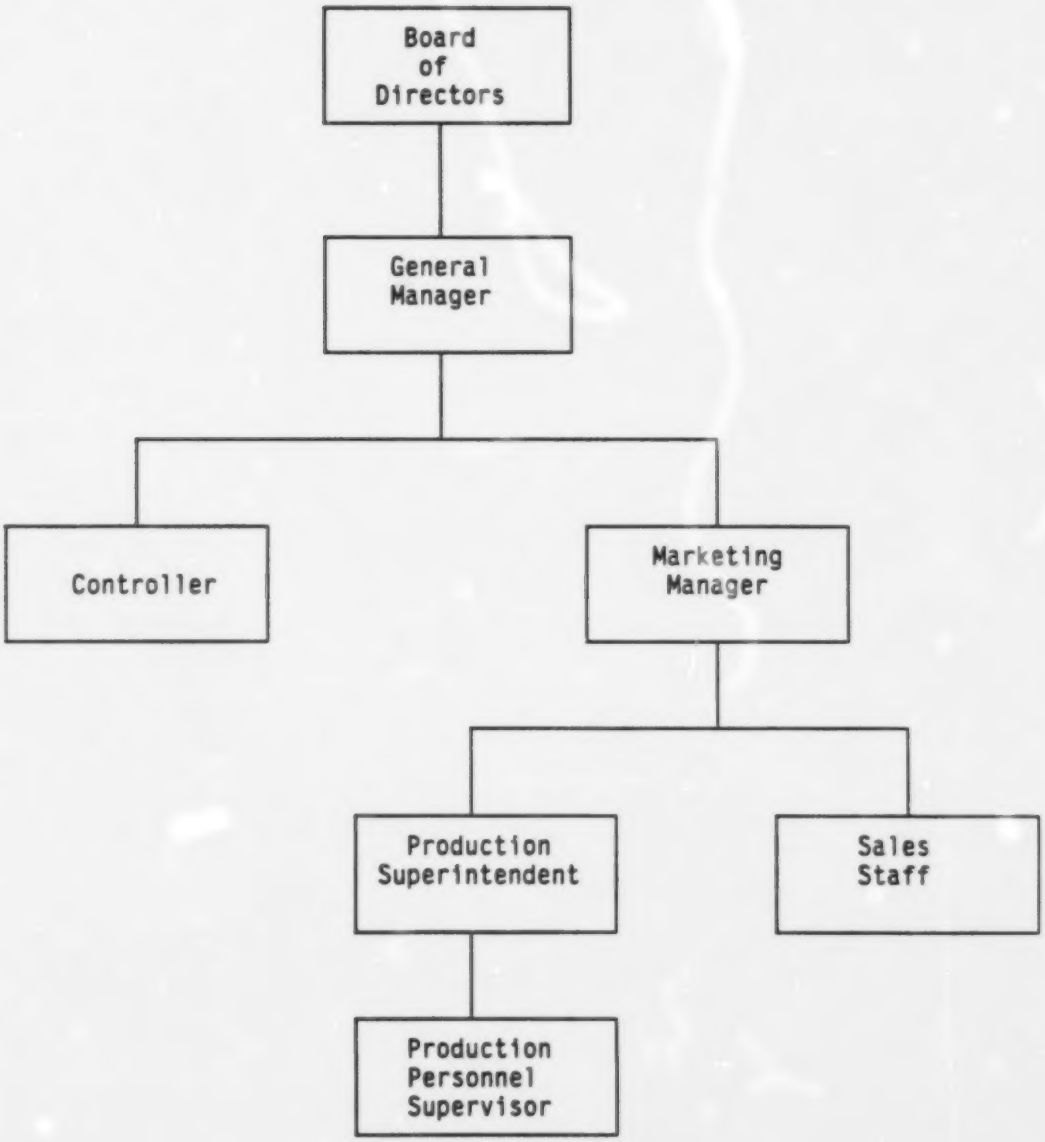
TRENDS IN DEMAND

None of the customers contacted believe that there is likely to be significant growth in the demand for products currently handled by the Co-operative.

FIGURE 5.1

B.C. Coast Vegetable Co-operative Association

Organizational Structure



V. B.C. COAST VEGETABLE CO-OPERATIVE ASSOCIATION: FINANCIAL AND OPERATIONAL OVERVIEW

The following paragraphs summarize our findings regarding the financial and sales performance of the Co-operative, the degree to which growers have switched to farm-packing and our conclusions regarding the current system used to determine grower charges. The data presented was compiled from several sources within the organization, including: audited financial statements and working papers; internal accounting, production and sales reports and records; annual reports; and discussions with management personnel.

ORGANIZATIONAL STRUCTURE

Figure 5.1 indicates the organizational structure of the Co-operative. The organization is headed by a General Manager. Two individuals report directly to the General Manager: the Controller and the Marketing Manager.

Two major departments report directly to the Marketing Manager: the sales desk and the plant. Currently, there is a Plant Superintendent who is assisted by a Plant Personnel Supervisor. There are usually three salespersons on staff. One position is vacant at this time.

The General Manager reports to an elected Board of Directors. The Board is comprised of five individuals. All of the current incumbents are potato producers. Of the five incumbents, three have been Directors for more than eight years. Directors are elected for a period of two years by secret ballot.

TABLE 5.1

B.C. Coast Vegetable Co-operative Association
Net Income for the Fiscal Years 1986 to 1988

	1986 (March 31, 1986) (12 months)	% Revenue	1987 (June 30, 1987) (15 months)	% Revenue	1988 (June 30, 1988) (12 months)	% Revenue
INCOME						
Grower Services	$ 1,808,040	55%	$ 2,058,741	51%	$ 2,134,116	52%
Agency Fees	612,868	19	873,027	22	1,046,402	25
Packaging, net	691,222	21	918,966	23	844,351	20
Storage						
Culls sales	140,956	4	141,394	3	72,660	2
Container sales	3,390	<1	17,474	<1	255	<1
Other income	23,241	1	34,512	1	22,650	1
TOTAL INCOME	3,279,717	100%	4,044,114	100%	4,120,434	100%
GROWER SERVICES		% Expenses		% Expenses		% Expenses
Wages & Benefits	972,320	29%	1,309,558	29%	1,271,233	32%
PACKAGING						
Wages & Benefits	288,144	9	352,189	8	341,145	8
Containers & Supplies	229,343	7	291,054	6	259,666	6
Sub-total	517,487	16	643,243	14	600,811	14
ADMINISTRATION						
Salaries & Benefits	205,111	6	271,314	6	211,250	5
Office	82,130	2	100,060	2	76,381	2
Professional	29,500	1	29,180	1	18,859	<1
Insurance	10,626	<1	30,450	1	23,282	1
Property taxes	80,981	2	60,295	1	82,604	2
Bad debt recover						
Director's Fees	25,054	1	34,141	1	24,047	1
Interest-term	75,431	2	87,837	2	72,272	2
Interest-line of credit	20,404	1	38,851	1	27,527	1
Miscellaneous	20,190	1	7,380	<1	4,716	-
Sub-total	549,427	16	659,508	15	540,938	14
SELLING & FIELD						
Wages & Benefits	107,713	3	128,015	3	118,712	3
Marketing fees	91,447	3	151,843	3	160,080	4
Advertising	58,552	2	122,307	3	123,475	3
Sub-total	257,712	8	402,165	9	402,267	10
WAREHOUSE						
Wages	474,323	14	611,320	14	499,527	13
Supplies	64,752	1	89,090	2	82,702	2
Utilities	98,824	3	126,756	3	119,691	3
Sub-total	637,899	19	827,166	19	701,920	18
REPAIRS & MAINTENANCE						
Wages	136,596	4	183,112	4	167,091	4
Supplies	153,233	5	241,254	5	156,702	4
Sub-total	289,829	9	424,366	9	323,793	8
Depreciation	148,678	4	205,242	5	154,468	4
TOTAL EXPENSES	3,373,352	100%	4,471,248	100%	3,995,430	100%
GROSS EARNINGS	(93,635)		(427,134)		125,004	
TAXES	-		-		25,500	
NET EARNINGS	($ 93,635)		($ 427,134)		$ 99,504	
$ AVERAGE EXPENSES PER MONTH	$281,113		$298,083		$332,953	

There are no appointed or elected advisors to the Board from industry. In 1987, the Co-operative invited members of the wholesale trade to participate in some meetings to exchange viewpoints with management and the Directors.

FINANCIAL OVERVIEW AND REVENUE ANALYSIS

Background

The major sources of revenue for the Co-operative consist of service charges for washing and grading and agency fees to cover administration, marketing and promotion activities. Other minor sources of revenue include: container sales; interest income; and revenue from the sale of culls.

In principle, revenue generated by charging growers for services provided should cover the costs of operating the Co-operative. Variances between revenues and operating expenditures may occur, however, for two major reasons: the actual volume of specific products handled is less or greater than forecast; and/or operating costs are less or greater than predicted. Another factor that can also result in variances between revenue and expenditures is that the method of forecasting and determining charges may not fully reflect the actual costs of operating the Co-operative such that charges are higher or lower than required to cover operating expenditures.

Operating Results 1986-1988

Table 5.1 contains the audited financial statements of the Co-operative for the fiscal years 1986 to 1988, inclusive. As shown, the organization sustained losses of $93,635 and $427,134 in 1986 and 1987

respectively, and realized an operating surplus of $99,504 in 1988. The annual reports for the Co-operative for 1986 and 1987 do not contain detailed analyses of the degree to which the operating deficits in these years were attributable to variances in projected volumes or costs. Regardless of the degree to which variances in these variables contributed to the losses, charges to members were not sufficient to cover costs in 1986 and 1987.

Because of flooding last year (i.e. in the 1988 crop year), members lost approximately 8,000 tons (one-third) of Russet Burbank potato production. This lost production resulted in lower volumes of plant throughput such that the management has predicted an operating deficit of approximately $374,000 for the fiscal year ended June 30, 1989. Audited financial reports for the year ended June 30, 1989 were not available at the time of report preparation.

Sources of Revenue

As indicated in Table 5.1, grower service charges accounted for between 51% and 55% of total revenues between 1986 and 1988. Agency fees accounted for between 19% and 25% of revenues in the same period.

Packaging revenue comprised between 21% to 23% of revenues. Packaging revenue reported in the audited financial statements represents the excess of revenue generated by sales of fully packaged products over the cost to the Co-operative of purchasing product from pools at fixed rates below the selling price of that product on the day of purchase by the Co-operative. This revenue effectively represents the gross margin on the product sale and contributes to direct packaging wages and benefits and to the fixed operating costs of the organization.

As illustrated by reported revenues, the loss of sales opportunities for cull products has resulted in a decline in revenue to the Co-operative during the last three years. As indicated, revenue from these sales declined by 48% between 1986 and 1988, from $140,956 in 1986 to $72,660 in 1988. Because operating expenses have not been declining, this loss in cull sales revenue has meant that an increasing portion of operating costs have had to be covered by direct service charges and agency fees levied on the product that growers ship to, and through, the plant. As indicated in Table 5.1, grower service charges and agency fees combined accounted for 74% of total revenue in 1986. In 1988, these charges accounted for 77% of total revenue.

EXPENSE ANALYSIS

As indicated in Table 5.1, wages and benefits for grower services, which are those incurred for washing and grading, account for the single largest expenditure of the Co-operative. Between 1986 and 1988, the cost of washing and grading labour accounted for an increasing proportion of total operating expenditures. In 1986 and 1987, these expenses comprised 29% of total sales whereas in 1988, washing and grading wages and benefits comprised 32% of total operating expenditures. The average wage rate including benefits for washing and grading in 1988 was $14.50. Of this amount, approximately $4.93 (34%) consisted of benefits.

The total value of wages and benefits paid for washing and grading, packaging, warehouse support and repairs and maintenance in 1986 through 1988, is shown in the following table:

TOTAL VALUE OF WAGES AND BENEFITS
1986 - 1988[1]

	$'000	% of Total
1986	$1,871	56%
1987	2,456	55%
1988	2,279	58%

[1] Expenses reported for 1987 are for 15 months.

As indicated, direct expenditures for hourly-paid plant personnel comprised between 56% and 58% of total operating expenses between 1986 and 1988. In comparison, fixed administration costs accounted for between 16% and 14% of total operating expenditures in 1986 through 1988.

SALES PERFORMANCE

Sales Volume

The table below indicates the quantities of product sold in the fiscal years 1986 to 1988 and to May 31, 1989. Because the Co-operative changed the date of its fiscal year end, sales volume and revenue figures reported for 1987 are for a fifteen-month period.

SALES, BY TONS, OF SPECIFIC PRODUCTS
1986 - 1989[1]

POTATOES	1986	1987	1988	1989
Earlies	3,437	4,829	3,438	2,218
Whites 1	1,549	2,035	2,043	1,925
Whites 2 & Proc.	6,555	10,199	9,519	9,683
Russets 1	5,634	5,027	5,652	3,854
Russets 2	505	790	1,197	802
Gems 1	8,872	14,994	10,384	8,324
Gems 2	6,726	7,617	6,980	3,433
Reds	1,329	1,546	1,339	1,595
Yellow	185	193	283	339
Sub-total	34,793	47,230	40,845	32,173

[1] Sales for 1987 are for 15 months.

SALES, BY TONS, OF SPECIFIC PRODUCTS (cont'd)
1986 - 1989[1]

VEGETABLES

	1986	1987	1988	1989
Beets	248	314	256	338
Cabbage	4,679	5,721	4,704	4,535
Carrots	4,807	4,837	6,376	5,138
Onions	4,986	3,551	4,704	4,328
Parsnips	130	154	172	196
Rutabagas	1,199	1,127	1,144	1,312
Processing Vegetables	483	333	14	
Sub-total	16,531	16,037	17,369	15,847
TOTAL	51,324	63,267	58,214	48,020

[1] To May 31, 1989

Potatoes account for the largest volume of product sold. In 1989, potato sales totalled 32,173 tons or 67% of total sales. #1 Gems account for the greatest portion of total potato sales. In 1989, sales of #1 Gems accounted for 25% of the total quantity of potatoes sold.

Carrots, cabbage and onions account for the largest portion of vegetable sales. In 1989, these crops accounted for 88% of the quantity of vegetables sold by the Co-operative.

Sales Revenue

The following table indicates the total sales revenue earned by the Co-operative in 1986 to 1988:

TOTAL SALES REVENUE AND AVERAGE REVENUE PER NET TON
1986 - 1988[1]

	($'000)	$/Net Ton
1986	$11,342	$221
1987	16,273	257
1988	13,617	234

[1] Sales for 1987 are for 15 months

TABLE 5.2

B.C. Coast Vegetable Co-operative Association

% Share of Vancouver Wholesale Market
By Crop and Month

	1987 - 1989 MONTHLY												WEIGHTED AVERAGE	
1987	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TO APR 30	TO DEC 31
Potatoes	44%	60%	65%	64%	42%	26%	50%	55%	72%	66%	61%	61%	59%	55%
Beets	88	83	83	--	100	80	100	100	100	100	100	100%	85	90
Cabbage	90	59	6	--	--	37	80	98	96	98	99	96	33	51
Carrots	8	--	--	2	--	--	42	76	77	90	88	64	2	35
Onions	62	--	2	--	--	--	--	24	56	64	53	68	17	31
Rutabagas	22	33	67	67	100	18	84	100	80	66	72	75	31	58
Parsnips	33	46	30	30	--	--	--	63	93	89	90	91	30	55
1988	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**		
Potatoes	53%	48%	49%	52%	45%	31%	44%	40%	72%	65%	56%	37%	50%	49%
Beets	96	94	--	--	--	24	50	97	88	91	94	85	54	71
Cabbage	78	78	1	--	--	19	79	89	99	97	94	80	43	59
Carrots	10	6	--	--	--	--	52	85	93	72	56	22	3	30
Onions	57	41	19	--	--	--	--	1	51	45	49	52	31	27
Rutabagas	44	31	41	67	8	21	85	89	67	63	61	62	44	53
Parsnips	82	55	26	23	66	--	--	42	81	100	89	85	43	58
1989	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**		
Potatoes	35%	46%	44%	37%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41%	N/A
Beets	82	89	86	78	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	85	N/A
Cabbage	75	67	31	--	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42	N/A
Carrots	7	5	6	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	N/A
Onions	48	55	28	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33	N/A
Rutabagas	62	56	72	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	N/A
Parsnips	53	26	67	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45	N/A

V10/10

As indicated, the average sales revenue per ton increased from $221 in 1986 to $234 in 1988.

Market Share by Crop

Table 5.2 indicates the estimated percentage share that the Co-operative achieved of the Vancouver wholesale market during the calendar years 1987 and 1988 and to April of 1989. The table also indicates the estimated market share that the Co-operative achieved during the period January to April in 1987 and 1988.

The market share of the organization varies significantly by crop and time of year. Of all the crops sold, the Co-operative has achieved the highest penetration in the beet market. Overall, in a year, the Co-operative supplies the majority of beets shipped to wholesale trade in Vancouver. In 1987, the Co-operative supplied an estimated 90% of the beet market while in 1988, the Co-operative shipped approximately 71% of the beets used by the Vancouver wholesale market.

The lowest penetration, by product market segment, is in the carrot market. In 1987 and 1988, the Co-operative supplied approximately 31% and 27%, respectively, of the carrot market.

In 1987, the Co-operative supplied approximately 55% of the potatoes sold to the Vancouver wholesaler market. In 1988, the market share of the Co-operative declined to 49%.

CUSTOMER CONCENTRATION

The following table indicates the total value of sales to major customers between 1986 and 1988. This list comprises all customers that purchased at least $100,000 in 1988. The table also indicates the percentage of total sales revenue that each customer accounted for in 1988.

TOTAL SALES BY CUSTOMER
1986 - 1988[1]
($'000)

Customer	1986	1987	1988	% Total 1988*
MacDonald's Consolidated	$2,561	$3,481	$3,486	26%
Overwaitea	1,644	2,251	1,990	15%
Kelly Douglas	1,620	2,493	1,973	14%
Nalley's	591	883	759	6%
White Spot	300	628	600	4%
Terminal Fruit	350	523	450	3%
Pacific Produce	310	427	336	3%
Swartz Bros.	99	497	265	2%
Tom Yee	52	210	231	2%
Van. Whol. Produce	136	351	229	2%
Apex Fruit & Vegetables	136	550	220	2%
West Coast Produce	220	646	198	1%
Central Foods	85	429	164	1%
General Fruit Produce	119	337	138	1%
Shoppers Wholesale	126	403	136	1%
Neptune Food Supplies	42	142	132	1%
National Fruit & Produce	1,049	308	119	1%
Bayshore Foods	143	360	115	1%
Konings Wholesale	53	163	112	1%
Yen Bros. Produce	76	375	102	1%
Total	$9,712	$15,457	$11,755	
# Customers	20	20	20	
% Total Sales	86%	95%	86%	

* Rounded to nearest percent.

[1] Sales for 1987 are for 15 months.

As shown, three customers accounted for 55% of total sales in 1988. In 1986 and 1987, sales to these customers comprised 50% of total sales. The customer base of the Co-operative has, therefore, become increasingly concentrated among the large retail chain wholesalers.

The remaining sales of the Co-operative are spread over numerous other customers, including fresh produce stands. The table below indicates the number of other customers that purchased from the Co-operative during the fiscal years 1986 to 1988:

NUMBER OF OTHER CUSTOMERS
1986 - 1988

	1986	1987	1988
# Other Customers	99	112	96
Total Sales ($'000)	$2,339	$651	$1,862
$/Customer ($'000)	$ 24	$ 6	$ 19

As shown, the number of other customers that purchased from the co-operative has generally remained stable since 1986 but the average purchase value per customer has decreased.

AVERAGE RETURN TO GROWERS PER NET TON

TOTAL AMOUNT PAID AND AVERAGE VALUE PER NET TON
1986 - 1988

	($'000)	$/Net Ton[1]	% of Sales Value
1986	$ 7,023	$137	62%
1987	11,169	177	66%
1988	8,744	150	64%

[1] After deduction of washing and grading charges.

TABLE 5.3

B.C. Coast Vegetable Co-Operative Association
Average Return Per Net Ton
by Product
1986 to 1988[1,2]

POTATOES	1986	1987	1988
Earlies	$170	$261	$229
Whites 1	91	127	114
Whites 2 & Proc.	96	109	103
Russets 1	85	150	123
Russets 2	94	169	130
Gems 1	104	146	120
Gems 2	104	105	90
Reds	131	202	230
Yellow	141	195	196
Average	**106**	**145**	**124**
VEGETABLES			
Beets	396	399	261
Cabbage	206	310	270
Carrots	215	269	145
Onions	70	168	212
Parsnips	775	864	888
Rutabagas	257	303	274

[1] The financial statements were not available for 1989 at the time of report preparation.

[2] We have rounded these numbers to the nearest dollar.

As indicated, the average net return to growers was equivalent to 62% of the average sales value in 1986, 66% in 1987 and 64% in 1988.

Average Return Per Net Ton By Product

The annual reports prepared by the Co-operative indicate the average settlement value paid per ton. The settlement value represents the amount paid to growers before deduction of washing and grading charges. The actual amount paid to after deduction of washing and grading charges varies among growers and varieties because of different cull rates.

The annual reports do not summarize average net amounts paid to growers. To determine these values, we obtained the working papers prepared for annual audits to identify the washing and grading charges paid for each major crop category such as potatoes, beets, and carrots. We then deducted these charges from the settlement values reported by the Co-operative. These values (as summarized in Table 5.3) provide an indication rather than actual average amounts paid for different potato varieties because the cull rates vary among types of potatoes. As shown, red, earlies and yellow potatoes, on average, yielded the highest per ton returns to potato producers in the last three years.

TONNAGE HANDLED BY PLANT VERSUS ON FARM

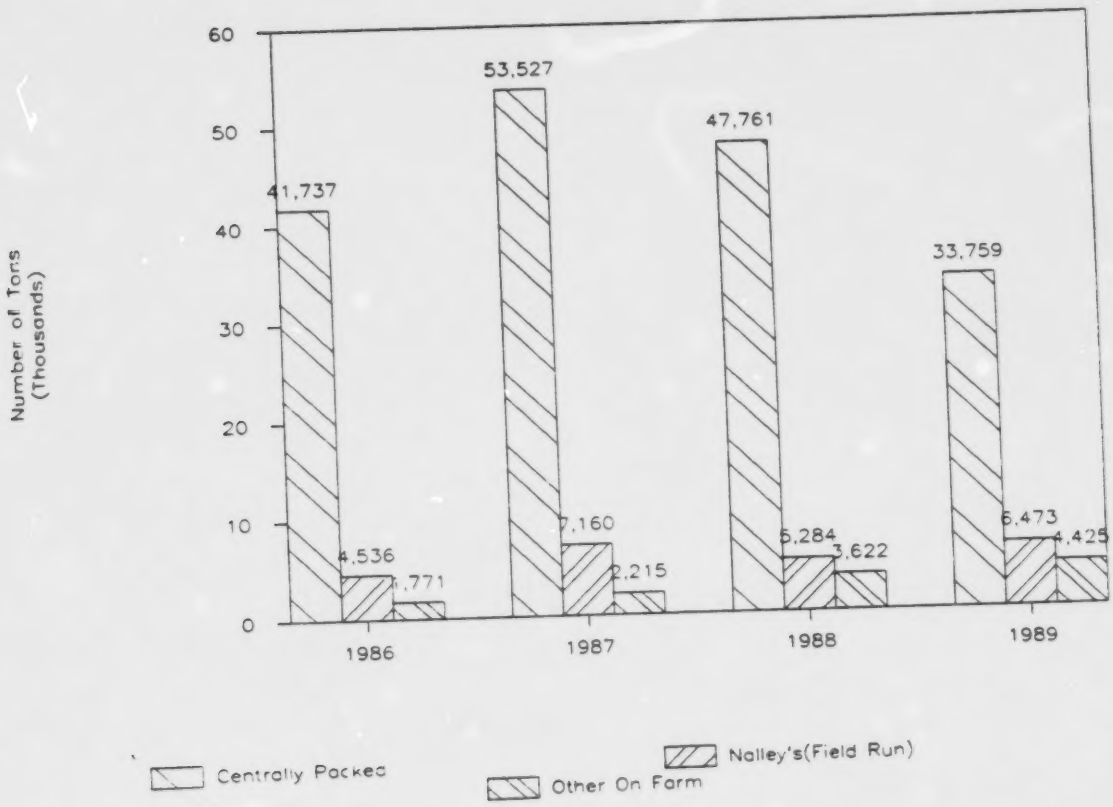
We derived a rough estimate of the quantity of product washed and graded on farm since 1986. To derive this estimate, we subtracted the net tons washed and graded at the plant from the quantity of net tons sold by the Co-operative in each year. We then converted the net ton figures to gross tons by adjusting the net ton figures for observed cull rates.

FIGURE 5.2

B.C. Coast Vegetable Co-operative Association

Estimated Quantity of Gross Tons Handled Centrally Versus On-Farm

POTATOES



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1 To May 31, 1989. Figures do not include "bootlegged" product.

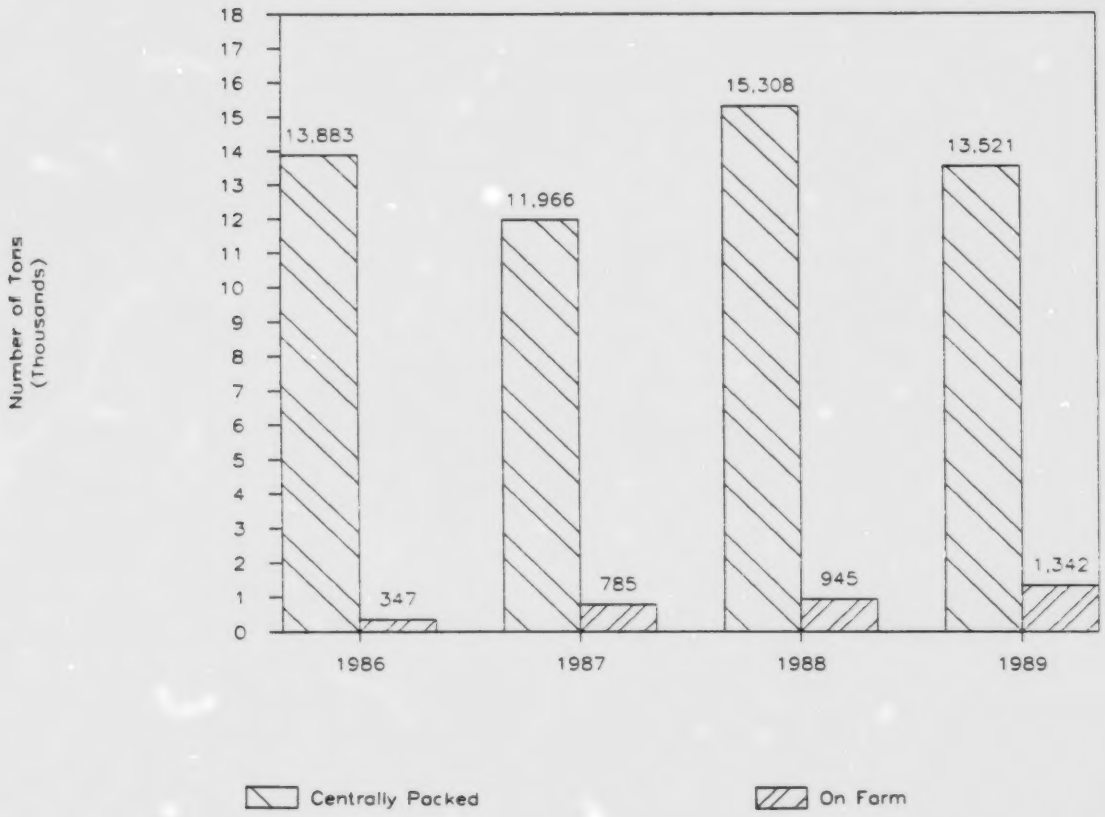
FIGURE 5.3

B.C. Coast Vegetable Co-operative Association

Estimated Quantity of Gross Tons Handled Centrally Versus On-Farm

VEGETABLES

1986 - 1989[1]



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[1] To May 31, 1989. Figures do not include "bootlegged" product.

The purpose of this analysis was to identify the extent of the trend towards on-farm packing versus use of the Co-operative's facilities. While the total quantity of product available for sale will vary from year to year because of differences in the number of acres planted and the yields obtained in any one year, the proportion of total product available for sale that is sent to the Co-operative versus handled on the farm indicates the degree to which growers are switching to on-farm functions.

Figures 5.2 and 5.3 contain a graphic summary of our findings.

As shown in figure 5.2, the relative quantity of potatoes sent to the Co-operative for washing and grading has declined since 1986 even when the quantity of field-run potatoes shipped to Nalley's is excluded from the analysis. The data in figure 5.2 illustrates the fact that increasing quantities of early and other processing potatoes are being washed and graded on the farm.

Figure 5.3 indicates the total estimated gross quantity of beets, carrots, onions, parsnips and rutabagas that were washed and graded on the farm versus at the Co-operative. We excluded cabbage from this analysis because 100% of this product has been farm-packed for several years.

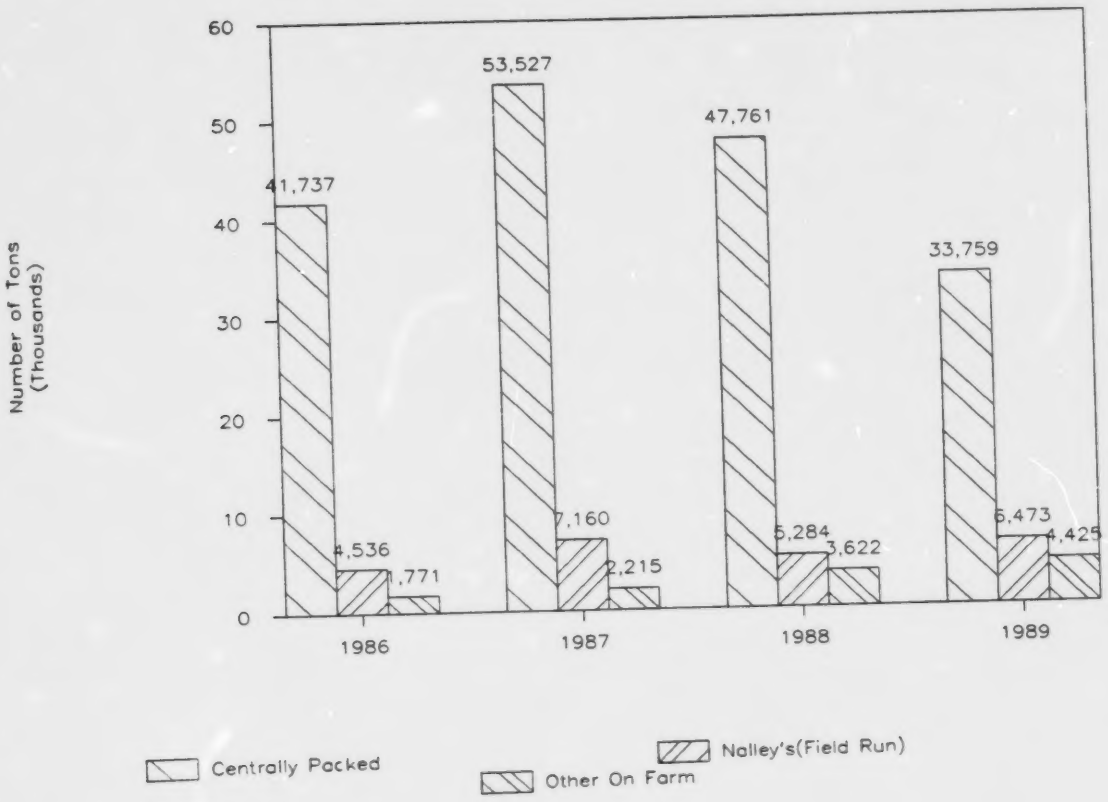
As shown, the relative quantity of vegetables that were farm-packed increased steadily between 1986 and 1989. In 1986, an estimated 347 tons of vegetables were handled on the farm compared to 13,883 tons at the Co-operative. The volume handled on farm in 1986, therefore, comprised 20% of the total gross quantity of vegetables (excluding cabbage) sold by the

FIGURE 5.2

B.C. Coast Vegetable Co-operative Association

Estimated Quantity of Gross Tons Handled Centrally Versus On-Farm

POTATOES



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[1] To May 31, 1989. Figures do not include "bootlegged" product.

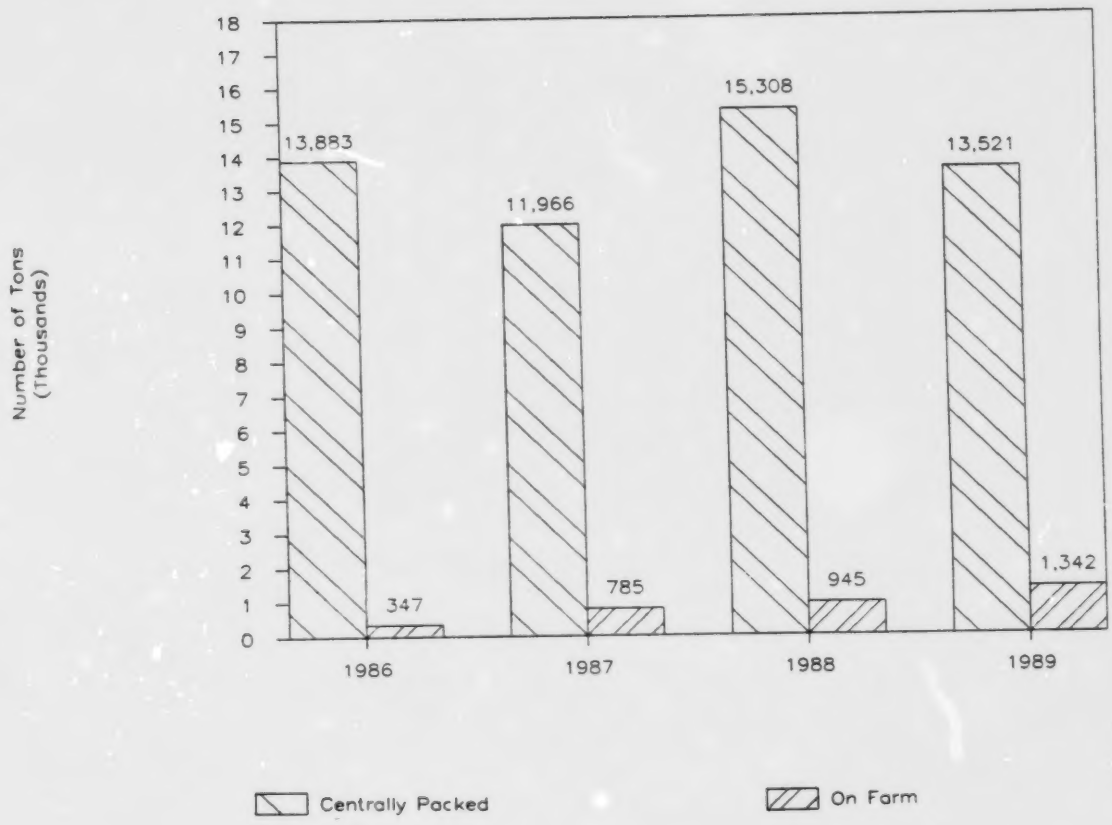
FIGURE 5.3

B.C. Coast Vegetable Co-operative Association

Estimated Quantity of Gross Tons Handled Centrally Versus On-Farm

VEGETABLES

1986 - 1989[1]



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1 To May 31, 1989. Figures do not include "bootlegged" product.

Co-operative in that year. In comparison, the total quantity of vegetables handled on farm in 1989 was 1,342 tons. In the same year, 13,521 tons were handled at the Co-operative.

In 1989, therefore, the quantity of vegetables handled (excluding cabbage) totalled 9% of all the vegetables sold by the Co-operative. The relative quantity of vegetables washed and/or graded on farm has therefore, been increasing. The major changes contributing to this pattern have been that parsnips and an increasing proportion of rutabagas are being farm-packed as shown in the following table:

PERCENTAGE OF VEGETABLES WASHED AND GRADED AT THE CO-OPERATIVE 1986 - 1989

	1986	1987	1988	1989
Carrots[1]	97%	98%	99%	90%
Onions	99%	99%	97%	90%
Beets	100%	100%	100%	100%
Parsnips	15%	12%	0%	0%
Rutabagas	99%	76%	81%	89%

[1] The % reported for carrots primarily reflects the impact of washing and grading baby carrots.

Overall, therefore, there has been a steady trend towards farm packing of both potatoes and vegetables.

CULL RATE BY CROP AND YEAR

As indicated in the following table, the average cull rate for potatoes remained relatively stable between 1986 and 1989:

TABLE 5.4

B.C. Coast Vegetable Co-operative Association
Charges Per Net Ton
1986 - 1989

Potatoes

	1986	1987	1988	1989	Average Annual % Change 1986 - 1989
AGENCY FEES					
Standard	$ 10.00	$ 10.50	$ 11.50	$ 11.50	5%
Countsize	--	--	11.50	11.50	-
Nalley's	10.00	10.50	10.50	10.50	2
White Spot	10.00	10.50	10.50	10.50	2
SERVICE CHARGES[1]					
Standard	36.11	34.67	38.02	45.83	8
Countsize	--	--	40.85	48.61	-
Nalley's	--	--	--	--	-
White Spot	36.11	34.67	36.62	44.44	7
OTHER[2]					
Standard	12.60	11.40	12.60	12.60	-
Countsize	--	--	29.60	29.60	-
Nalley's	.20	.20	.40	.40	26
White Spot	.20	.20	.40	.40	26
TOTAL					
Standard	58.71	56.57	62.12	69.93	6
Countsize	--	--	81.95	89.71	-
Nalley's	10.20	10.70	10.90	10.90	2
White Spot	46.31	45.37	47.52	55.34	6

1 Service Charges represent charges for washing and grading and have been adjusted for cull rates and are, therefore, stated on a net ton basis.

2 Other charges include those for: containers; claims and overages; promotion; special services; and research. Surcharges are not included.

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ESTIMATED AVERAGE ANNUAL CULL RATE BY CROP
1986 - 1989

Crop	1986	1987	1988	1989
Potatoes	28%	25%	29%	28%
Beets	20%	20%	33%	29%
Carrots	28%	27%	28%	31%
Onions	10%	14%	12%	14%
Rutabagas	22%	15%	18%	15%

In comparison, the average cull rate for carrots, beets and onions tended to increase during the same period while the cull rate for rutabagas decreased. The decrease in the cull rate for rutabagas likely reflects the impact of more trimming being done on farm prior to shipping the product to the Co-operative.

SCHEDULED CHARGES PER NET TON

Tables 5.4 and 5.5 indicate the scheduled charges and agency fees, by crop, for the fiscal years 1986 through 1989. These figures include: washing and grading charges; agency fees; claims and overage charges; container charges; research charges; promotional charges; and special service charges and represent the major charges levied on products shipped to, and/or sold by, the Co-operative. The charges in Tables 5.3 and 5.4 do not include surcharges or the costs of packaging carrots, onions and potatoes in poly bags.

While washing and grading (i.e. service) charges are levied against gross tons, we calculated an effective service charge per net ton by adjusting the gross ton charge by the cull rate achieved for specific products in a given year. While the data reported in Tables 5.3 and 5.4 do not represent the total charges paid by growers, they represent a significant proportion of such charges and, therefore, can provide an indication of trends in the amounts paid by growers.

TABLE 5.5

B.C. Coast Vegetable Co-Operative Association
Charges Per Net Ton
1986 - 1989

Vegetables

	1986	1987	1988	1989	Average Annual % Change 1986 - 1989
AGENCY FEES					
Beets	$ 10.00	$ 10.50	$ 11.50	$ 11.50	5%
Carrots	10.00	10.50	11.50	11.50	5
Onions	10.00	10.50	11.50	11.50	5
Rutabagas	10.00	10.50	11.50	11.50	5
Parsnips and cabbage	10.00	10.50	11.50	11.50	5
SERVICE CHARGES[1]					
Beets	65.00	65.00	89.55	84.50	9
Carrots	76.39	75.34	83.33	86.96	4
Onions	40.00	41.86	43.90	46.51	5
Rutabagas	48.72	44.71	46.34	44.71	(2)
Parsnips and cabbage	77.50	87.32	--	--	--
OTHER[2]					
Beets	12.60	11.40	12.40	13.40	2
Carrots	12.60	11.40	13.40	17.40	11
Onions	20.40	19.40	20.90	20.90	1
Rutabagas	12.60	11.40	12.40	17.40	11
Parsnips	14.60	13.40	--	--	--
TOTAL					
Beets	87.60	86.90	113.45	109.40	8
Carrots	98.99	97.24	108.23	115.86	5
Onions	70.40	71.76	76.30	78.91	4
Rutabagas	71.32	66.61	70.24	73.61	1
Parsnips	102.10	111.22	--	--	-

---

1 Service Charges represent charges for washing and grading and have been adjusted for cull rates and are, therefore, stated on a net ton basis.

2 Other charges include those for: containers; claims and overages; promotion; special services; and research. Surcharges are not included.

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As indicated, charges levied on standard potatoes increased by an average annual rate of 6% between 1986 and 1989. Increases in washing and grading (i.e. grower service charges) exceeded the average increase in charges. In this period, for example, grower service charges on standard potatoes increased by an average annual rate of 8%.

The data in Table 5.4 also illustrate that washing and grading charges account for the greatest proportion of the total standard charges paid by growers on product that is shipped to the Co-operative. As shown below, washing and grading charges represent significantly more than 50% of the total standard charges for most potatoes with the exception of count-sized potatoes:

GROWER SERVICE CHARGES AS A % OF TOTAL CHARGES
1986 - 1989

Year	Standard	Count-Sized	Whitespot
1986	62%	-	78%
1987	61	-	76
1988	66	50	77
1989	66	54	80

As shown in Table 5.5, increases in the charges placed on vegetables between 1986 and 1989 ranged from 1% for rutabagas to 8% for beets. As for potatoes, washing and grading charges on vegetables account for the major portion of charges:

GROWER SERVICE CHARGES AS A % OF TOTAL CHARGES
1986-1989[1]

Year	Beets	Carrots	Onions	Rutabagas
1986	74%	77%	57%	68%
1987	75	77	58	67
1988	79	77	57	66
1989	77	75	59	61

1 We have not included parsnips because all parsnips are now washed and graded on the farm.

TABLE 5.6

B.C. Coast Vegetable Co-operative Association
Management Forecast of Operating Expenditures
for the Fiscal Year ending June 30, 1990

DIRECT PRODUCT COSTS	$	$ Total
Wages	$1,213,400	$1,213,400
INDIRECT EXPENSES (GROSS VOLUME)	80%	
Production Expansion	56,806	71,000
General Warehouse Wages	176,900	221,100
Warehouse Supplies	60,500	75,600
Utilities	95,100	118,900
Maintenance Wages	135,000	168,700
Maintenance Supplies	120,000	150,000
Administration (20%)	79,000	100,000
	724,100	905,300
AGENCY FEES (NET VOLUME)		
Depreciation	112,000	140,000
Taxes & Licences	68,000	85,000
Insurance	16,800	21,000
Interest, Term	75,000	75,000
Interest, Operating	35,000	35,000
Advertising	20,000	20,000
Commission Fees	106,200	106,200
Sales and Field Staff	110,000	110,000
Administration	319,200	319,200
	862,200	911,400
Total	$2,799,700	$3,030,100

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Of all these crops, washing and grading charges are most significant for carrots and beets.

DETERMINATION OF CHARGES: CURRENT ALLOCATION SYSTEM

The General Manager prepares financial and volume forecasts after reviewing intended planting information. He initiates this process in April. The forecasts for the year ending June 30, 1990 are summarized in Table 5.6. As shown, the forecasts include only partial estimates of advertising costs and no estimates for packaging wages and benefits.

Direct Product Costs

The current system includes forecasts of direct product costs for the washing, grading, shipping and receiving functions only.

Indirect Grower Service Expenses

Under the current system, 80% of the following costs are considered to be indirect grower service expenses that are allocated to each product on the basis of relative gross volumes handled:

- Production supervision;
- General warehouse wages other than shipping and receiving wages;
- Utilities;
- Maintenance supplies;
- Maintenance wages; and
- Administration (i.e. 80% of the 20% that is allocated to grower services).

For example, if potatoes represent 68% of the forecast gross volume, then 68% of the expenses in this category are allocated to potatoes in determining the service charge per gross ton.

The remaining 20% of these aggregate costs are to be covered by the packaging operation. No specific charge is determined for packaging.

As noted previously, the Co-operative purchases product required for packaging from product pools at specified rates (e.g. $50.00 for potatoes) below the current selling price. The Co-operative then sells this product and accounts for the excess of sales revenue over the price the Co-operative purchased the product from the pool by including this amount in a general revenue account (Packaging, net). This excess is intended to contribute to the 20% of indirect expenses that are not covered by the service charges levied on a gross ton basis.

Agency Fees

Agency fees are determined on a net ton basis. The expenses included in the agency fee calculation are:

- Depreciation (80%);
- Taxes and licenses;
- Insurance (80%);
- Interest, term loan;
- Interest, line of credit;
- Advertising;
- Commission fees;
- Selling and field salaries; and
- 80% of administration expenses.

TABLE 5.7

B.C. Coast Vegetable Co-operative Association

Management Forecasts of Volumes, Costs and Charges
By Product
For the Fiscal Year Ending June 30, 1990
Based on Current Allocation System[1]

SERVICE CHARGES	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS[2] AND CABBAGE	TOTAL
GROSS VOLUME	36,590	420	$ 6,500	$ 4,100	850	5,170	53,630
Total Costs ($)	$ 1,281,500	$ 24,800	$ 386,100	$ 157,800	$ 29,900	$ 57,400	$ 1,937,500
$/ton	$35.02	$59.05	$59.40	$38.49	$35.18	$11.10	--
Recommended Charges	**$35.00**	**$60.00**	**$60.00**	**$40.00**	**$38.00**	**$11.00**	—
AGENCY FEES	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS AND CABBAGE	
NET VOLUMES	40,460	300	4,950	4,000	1,200	5,170	56,080
Total Costs ($)	$ 620,900	$ 4,300	$ 77,500	$ 60,300	$ 17,200	$ 82,000	$ 862,200
$/ton	$15.35	$14.33	$15.66	$15.06	$14.33	$15.86	
Recommended Charges	**$15.00**	**$15.00**	**$15.00**	**$15.00**	**$15.00**	**$15.00**	
Nalley's and White Spot	**$13.50**	—	—	—	—	—	

[1] These charges do not include the surcharge to cover the 1989 deficit, full promotional charges, container charges, claims and overage charges, research charges, special service charges or packaging costs.

[2] "Handling" charge.

Charges for 1990

Table 5.7 contains the forecast charges for products for the 1990 fiscal year that were determined by management using the allocation system described. As indicated, the service charge for potatoes is forecast to be $35.00 per gross ton while the service charges for vegetables are projected to be higher, a pattern which reflects the greater time it takes to handle these products.

The Agency fee is forecast to be $15.00 per ton. Adjustments of $1.50 were deducted for processing potatoes which go directly to Nalley's and White Spot. For these products, the recommended fee was $13.50.

The Directors approved these recommendations in the Spring of 1989. These charges have not yet been implemented pending further consideration.

Relationship Between Charge Allocation Method and Costs

The current method used to determine service charges by product is not based on a standard costing system in which forecast, direct costs by product and function would form the basis for the service charge. The method used to charge out washing, grading, shipping and receiving wages is reasonable in that direct line wages likely to be incurred for specific crops are used to determine this component of the service charge.

Other direct costs, such as the direct wages and supplies incurred to package product for the fresh market and the depreciation and financing costs on pieces of equipment that can be objectively linked to specific products are not, however, included in the preparation of product-specific service charges. The information does exist, however, to link these direct costs to specific products and to develop a standard product charge that reflects these costs.

The current system also does not provide the basis for incremental charges to be levied against growers who ship poor quality product such that the throughput on the line is slowed down or against growers who reduce the efficiency of the line and other plant functions by delivering their product later than scheduled. While growers who ship dirty product, for example, are in some manner penalized in that they are likely to realize a lower net tonnage for sale, the current system does not allow for recovery of all the costs of slowing down the line and provides limited direct feedback to growers who use the plant less efficiently than others. At the present time, the management information system does not provide the data needed to quantify the costs of these inefficiences. We cannot, therefore, identify the costs of these occurrences.

The financial and production information currently used by management is maintained manually. This type of system can limit the time-effectiveness of the budgetting and forecasting process that forms the basis for calculating charges. In addition, manual recordkeeping makes it more time consuming to prepare internal productivity reports.

There is a need, therefore, to refine the management information systems of the Co-operative, including linking product service charges more directly to the costs of handling certain crops and monitoring plant efficiency. It is beyond the scope of this project to design a new management information system or charge determination method or to identify the cost of changing the system.

Changes to the forecasting and charge determination system could include developing a standard costing system based on the following expense categories:

Direct, Product-Specific Costs

These costs would include: washing and grading wages; shipping and receiving wages; equipment depreciation and equipment financing costs for assets used specifically or primarily for a given product, e.g. the hydrocooler for carrots; and the wages and direct supplies required for packaging as well as the depreciation and financing costs of specific packaging equipment. Major maintenance expenditures planned for specific product lines would also be included.

The washing, grading and receiving wages could be charged against forecast gross tons as is now the case. Additionally, depreciation, financing and maintenance costs would be added to this component of the service charge.

Packaging wages, supplies, depreciation and packaging equipment financing charges would be levied on a net ton basis against the forecast net volume of packaged products likely to be produced.

Indirect General Warehouse Overhead Expenses

These expenses would include: the total (100%) of production supervision; general warehouse wages and supplies; plant utilities[1]; and maintenance wages and supplies that could not be linked to specific washing and grading lines or packaging machines; general plant equipment depreciation and financing costs; building depreciation and interest on the building term loan, allocated on a square footage basis between the plant and administrative office area; and insurance allocated to the plant versus the administrative area.

These costs would be allocated on a gross ton basis to all product handled by the plant. Net tons of farm-packed product that were received and shipped by the warehouse would be treated as gross tons for the purpose of allocating these costs among products.

Direct, Product-Specific Marketing Costs

These expenses consist of commission fees which are set for each product.

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1 Total building utilities could be allocated on a square footage basis or actual consumption, depending upon the availability of this data.

These costs would be charged against all fresh market and processing products, on a net ton basis.

Indirect Marketing Costs

These costs would include: sales staff and field salaries; all advertising and promotion costs and interest on the operating line of credit.

These costs would be allocated to all net tons of fresh market product sold by the Co-operative because these costs arise primarily from the efforts required to service the fresh market.

Indirect Administration Expenses

This category would include: all administration costs; the depreciation, utilities and insurance that is applicable to the office area and interest on the term loan allocated on a square footage basis between the plant and office area.

These expenses would be allocated on a net ton basis to all products sold by the Co-operative.

These changes should be considered in the context of a review of the management information systems of the Co-operative.

VI. B.C. COAST VEGETABLE CO-OPERATIVE ASSOCIATION: COST ANALYSIS

The following paragraphs summarize our calculations of the average per ton costs of operating the Co-operative and our detailed calculations of the unit costs, by function, for specific crops for the fiscal years 1986 to 1988. **The average cost data presented in the following paragraphs provide a rough indication of average unit costs but do not differentiate among products. Averaged costs are heavily influenced by the major volume crop, potatoes.**

The detailed costs by product and function provide a more useful base against which growers can compare on-farm costs. When comparing the costs of the Co-operative to on-farm functions, the most meaningful information to use consists of the person-hours for each function. Accordingly, we have calculated the time required per net ton, for each crop for the following two major functions: washing and grading; and packaging.

AVERAGE COSTS BY FUNCTION

To calculate average costs by function, we divided the total expenditures in a given category, e.g. grower services, by the total relevant tonnage to which these costs are most attributable to. For example, we divided total washing and grading costs by the total gross tonnage washed and graded at the Co-operative rather than by the quantity of net tons sold. The following paragraphs summarize these calculations.

Washing and Grading

The following table indicates the total gross tonnage of product handled in each of the last three fiscal years and the average labour cost of washing and grading this volume:

AVERAGE LABOUR COST PER GROSS TON[1]
1986 - 1988

Total Wages and Benefits ($'000)	$ 972	$1,310	$1,271
Total Gross Tons	55,621	65,493	63,069
$/Ton	$17.48	$19.99	$20.16

[1] Does not include administrative salaries.

On a gross ton basis, washing and grading costs increased by 15% between 1986 and 1988.

Packaging

The following table indicates the average cost of packaging product. Packaged product includes potatoes, carrots and onions that are packaged in poly bags.

AVERAGE NET PACKAGING COST
PER TON PACKAGED
1986 - 1988

Item	1986	1987	1988
Total Net Tons Packaged	12,683	14,611	14,297
Total packaging Wages ($'000)	$ 288	$ 352	$ 341
$/Ton	$22.72	$24.10	$23.86
Total Packaging supplies	$ 229	$ 291	$ 260
$/Ton	$18.08	$19.92	$18.16
Total $/Ton	$40.80	$44.02	$42.02

As indicated, the average cost per ton to package was approximately $42.02 in 1988. Of this amount, wages and benefits accounted for approximately 57%.

Warehouse

The following table indicates the average cost of warehouse labour, supplies and utilities per ton of product shipped from the Co-operative:

AVERAGE WAREHOUSE COST PER TON SHIPPED
1986 - 1988

Item	1986	1987	1988
Total Tons Shipped	46,301	56,090	51,309
Total Warehouse Wages ($'000)	$ 474	$ 611	$ 499
$/Ton	$16.24	$10.90	$ 9.73
Total Warehouse Supplies and Utilities ($'000)	$ 164	$ 216	$ 202
$/Ton	$ 3.53	$ 3.05	$ 3.94
Total $/Ton	$13.77	$14.75	$13.67

As indicated, the labour cost per ton declined in 1988 from the cost incurred in 1987 and 1988.

Repairs and Maintenance

We divided these expenses by the number of gross tons handled because our discussions with management indicated that the bulk of the repair and maintenance resources are utilized in the servicing of washing and grading equipment:

AVERAGE REPAIR AND MAINTENANCE COST PER GROSS TON 1986 - 1988

Item	1986	1987	1988
Total Tons (Gross)	55,621	65,493	63,069
R&M Wages ($'000)	$ 137	$ 183	$ 167
$/Ton	$ 2.46	$ 2.80	$ 2.65
R&M Supplies ($'000)	$ 153	$ 241	$ 157
$/Ton	$ 2.75	$ 3.68	$ 2.48
Total $/Ton	$ 5.21	$ 6.48	$ 5.13

As shown, the total cost of repairs and maintenance was approximately $5.13 per gross ton of product in 1988.

Selling, Administration and Depreciation

We divided these expenses by the number of net tons sold to determine the average marketing and overhead cost per net ton sold:

AVERAGE MARKETING AND OVERHEAD COST PER NET TON SOLD 1986 - 1988

Item	1986	1987	1988
Net Tons Sold	51,324	63,267	58,214
Administration, Depreciation and Selling and Field Expenses (000)	$ 956	$1,267	$1,098
$/Ton	$18.62	$20.02	$18.86

As shown, the fixed overhead and marketing costs of the Co-operative averaged approximately $18.86 per ton in 1988.

SUMMARY OF AVERAGE COST ANALYSIS

On an average cost basis, the greatest increase in unit costs in the last three years has been in the washing and grading operation. Factors which appear to have contributed to this increase include a modest rise in cull rates and the fact that, on a percentage of gross volume, carrots have accounted for an increased proportion of the tonnage handled at the plant.

Other factors, such as reduced labour productivity and poor crop preparation, may have also influenced the rise in unit costs for washing and grading. The lack of internal management reports, however, precludes a comprehensive assessment of the degree to which these other factors contributed to this increase.

COSTS BY CROP AND FUNCTION

To calculate unit costs by product and function, we categorized costs into two major groups: those which could be readily linked to a specific product (i.e. direct costs) and those which were not attributable to a specific crop (i.e. indirect costs). We then further categorized the indirect expenses into two groups: those which were linked to product handled at the plant and those linked to products sold by the Co-operative.

For the purposes of our cost calculations, we classified the following expenses as a product-specific, direct expenses:

- Receiving wages and benefits;
- Washing and grading wages and benefits;
- Packaging wages and benefits and packaging supplies;
- Shipping wages and benefits; and
- Marketing Commission fees.

Although the depreciation and financing costs for equipment used solely or primarily for a specific crop are also direct expenses, we did not isolate out these variables because of the limited detail that was readily available from the Co-operative and the fact that some equipment, such as the #2 potato line, is fully depreciated. This impact of this exclusion is not, however, material.

The following expenses were classified as indirect, plant costs:

- Repairs and maintenance wages, benefits and supplies;
- General warehouse supervision, wages and benefits and supplies; and
- Equipment depreciation.

In addition to the above expenses, we allocated 88% of total annual insurance, property tax and building depreciation costs to this category of expenses. The proportion allocated was based on the distribution of total square footage between office and plant areas. In total, approximately 88% of the building area is comprised of plant space.

The following expenses were treated as indirect, overhead costs:

- Selling and field staff salaries and benefits;
- Administration expenses; and
- Building depreciation.

Product-Specific Direct Costs

Appendix 3 contains our calculations of the receiving, washing and grading, shipping and packaging costs for each crop for 1986 to 1988. Because we wanted to indicate the cost of getting the product to market, these costs are

TABLE 6.1

B.C. Coast Vegetable Co-operative Association
Product - Specific/Direct Costs by Crop and Function
1986 - 1988

1986 Product - Specific/Direct	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS & CABBAGE
Receiving	$ 1.99	$ 1.81	$ 1.96	$ 1.61	$ 1.86	$ --
Washing & Grading	21.31	37.71	39.87	21.44	21.33	--
Shipping	1.45	1.89	1.89	1.89	1.45	4.36
Marketing-Commission Fees	1.85	1.85	1.85	1.85	1.85	1.85
Sub-total	$ 26.60	$ 43.26	$ 45.57	$ 26.79	$ 26.49	$ 6.21
Packaging	32.11	N/A	84.72	53.33	N/A	N/A
Total	$ 58.71		$130.29	$ 80.12		
1987 Product - Specific/Direct						
Receiving	$ 2.20	$ 2.08	$ 2.24	$ 1.93	$ 1.98	$ --
Washing & Grading	23.68	38.44	48.98	25.12	23.26	--
Shipping	1.59	1.56	2.07	2.08	1.90	4.77
Marketing-Commission Fees	1.90	1.90	1.90	1.90	1.90	1.90
Sub-total	$ 29.37	$ 43.98	$ 35.22	$ 31.03	$ 29.03	$ 6.67
Packaging	35.16	N/A	105.58	N/A	N/A	
Total	$ 64.53		$160.80	$ 83.08		
1988 Product - Specific/Direct						
Receiving	$ 2.04	$ 2.15	$ 2.03	$ 1.65	$ 1.77	--
Washing & Grading	24.89	49.49	46.44	23.44	20.12	--
Shipping	1.48	1.92	1.92	1.92	1.48	4.43
Marketing-Commission Fees	2.15	2.15	2.15	2.15	2.15	2.15
Sub-total	$ 30.56	$ 55.71	$ 52.54	$ 29.16	$ 25.52	$ 6.58
Packaging	34.14	N/A	88.48	60.74	N/A	N/A
Total	$ 64.70		$141.02	$ 89.90		

TABLE 6.2

B.C. Coast Vegetable Co-operative Association

Person-Hours Required to Wash and Grade Products

1986 - 1988

Crop	1986		1987		1988	
	Hrs/Gross Ton	Hrs/Net Ton	Hrs/Gross Ton	Hrs/Net Ton	Hrs/Gross Ton	Hrs/Net Ton
Potatoes	1.08	1.49	1.26	1.67	1.19	1.67
Beets	2.22	2.77	2.12	2.66	2.37	3.49
Carrots	2.03	2.83	2.44	3.34	2.31	3.22
Onions	1.41	1.56	1.56	1.82	1.47	1.67
Rutabagas	1.05	1.34	1.29	1.52	1.01	1.22

stated on a net ton basis. Summary cost data from Appendix 3 is shown in Table 6.1. In addition, we have included marketing commission fees in Table 6.1.

As indicated in Table 6.1, the costs for receiving and shipping functions do not vary as notably among crops as the costs of washing and grading. The reason for this pattern is that there are no major differences in the labour required to receive and ship different products. Differences in effective net ton receiving costs, therefore, relate primarily to differences in cull rates and in the case of shipping, to differences in cull rates and the quantity of product that can be loaded on a single pallet.

Washing and grading costs, however, vary significantly among products. This variability reflects the differences in the time required to grade different types of products.

Table 6.2 indicates the number of person-hours required to wash and grade products at the Co-operative between 1986 and 1988. This time is stated in person-hours on a gross and net ton basis. As indicated, the time required to wash and grade a ton of carrots or beets is approximately twice that required to wash and grade a ton of potatoes, onions or rutabagas.

Packaging costs also vary among potatoes, carrots and onions. These differences relate to the labour required to package these products into poly bags for the fresh market. The table below indicates the person-hours required to package a ton of each of these crops in 1986 to 1988:

PERSON-HOURS REQUIRED TO PACKAGE PRODUCTS
1986 - 1988

	1986	1987	1988
Potatoes	1.16	1.21	1.24
Carrots	3.80	4.60	4.03
Onions	2.24	1.88	2.60

As with washing and grading, significantly more time is required to package a ton of carrots as compared to a ton of potatoes or onions.

Indirect Plant Costs

Because indirect plant costs are not linked to individual products, we calculated a standard unit plant cost by dividing the total expenses in each of the three sub-categories by the relevant net tonnage to which these expenses are logically attributable. The following table indicates the allocation basis used for each of the sub-categories:

ALLOCATION BASIS FOR INDIRECT PLANT EXPENSES BY SUB-CATEGORY

Sub-Category	Basis
Repairs and Maintenance	Net tons washed and graded at plant
Equipment Depreciation	Net tons washed and graded at plant
General Warehouse	Net tons shipped from plant
Insurance, property taxes, and building depreciation	Net tons shipped from plant

As shown, repairs and maintenance expenses and equipment depreciation were allocated over net tons handled at the plant. These expenses were, therefore, not allocated to any farm-packed product that was only shipped to the plant. The remaining sub-categories were allocated over the total tonnage shipped from the plant and were, therefore, applied to farm-packed product which was handled by the Co-operative as well as product which was washed and graded at, and then shipped from, the plant.

TABLE 6.3

B.C. Coast Vegetable Co-operative Association

Indirect Overhead Expenses
$ Per Net Ton
1986 - 1988

	1986	1987	1988
APPLIED TO FRESH SALES			
Advertising - Total $ allocated	$ 58,552	$123,307	$123,875
Sales Staff - Total $ allocated	79,713	100,015	90,712
Net Tons Sold	$ 45,511	$ 53,703	$ 49,074
$ Per Net Ton			
Advertising	$ 1.29	$ 2.30	$ 2.52
Sales Staff	2.29	1.86	1.85
APPLIED TO FRESH AND PROCESSING SALES			
Administration - Total $ allocated	$468,813	$579,679	$448,286
Building depreciation - Total $ allocated	3,269	3,269	3,269
Marketing Manager's Salary - Total $ allocated	28,000	28,000	28,000
Net tons Sold	$ 51,324	$ 63,267	$ 58,214
$ Per Net Ton			
Administration	$ 9.13	$ 9.16	$ 7.70
Building depreciation	0.06	0.05	0.06
Marketing Manager's Salary	0.59	0.44	0.48

Table 6.3 indicates the unit cost of indirect, plant operations in 1986 through 1988. This cost, as calculated, was the same for all fresh market products, with the exception of parsnips and cabbage packed on the farm. Only general warehouse expenses, building depreciation and insurance and property taxes were applied to these products.

Indirect Overhead Expenses

There is currently significant debate among growers as to which costs should be allocated to processing potatoes. It is beyond the scope of this study to recommend a comprehensive alternative costing or charge allocation system for the Co-operative. We have, however, addressed the debate to assist in clarifying this issue.

We classified overhead expenses into two sub-groups: those which apply logically to only fresh market sales of all crops and those which apply to both fresh market sales of all crops and processing potato sales. The table below indicates the costs included in each sub-group:

OVERHEAD EXPENSE SUB-CATEGORIES

Applied to Fresh Sales	Basis of Allocation
Advertising expenses	Net tons sold
Sales staff salaries	Net tons sold
Applied to Fresh and Processing Sales	
Administration expenses, less 88% of insurance and property taxes	Net tons sold
Building depreciation, less 88% charged to the plant	Net tons sold
Marketing Manager salary and benefits	Net tons sold

TABLE 6.4

B.C. Coast Vegetable Co-operative Association
Fresh Market
Total Costs By Product (Excluding Packaging)
$ Per Net Ton
1986 - 1988

	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS & CABBAGE[1]
1986						
Product-Specific Direct Costs	$ 26.60	$ 43.26	$ 45.57	$ 26.79	$ 26.49	$ 6.21
Indirect Plant Costs	22.40	22.40	22.40	22.40	22.40	12.45
Indirect Overhead Costs	14.32	14.32	14.32	14.32	14.32	14.32
Total	$ 63.32	$ 79.89	$ 82.29	$ 63.51	$ 63.21	$ 32.98
1987						
Product-Specific Direct Costs	$ 29.37	$ 43.98	$ 55.22	$ 31.03	$ 29.03	$ 6.67
Indirect Plant Costs	24.75	24.75	24.75	24.75	24.75	12.66
Indirect Overhead Costs	13.81	13.81	13.81	13.81	13.81	13.81
Total	$ 67.93	$ 82.54	$ 93.78	$ 69.59	$ 67.59	$ 33.14
1988						
Product-Specific Direct Costs	$ 30.56	$ 55.71	$ 52.54	$ 29.16	$ 25.52	$ 6.58
Indirect Plant Costs	22.08	22.08	22.08	22.08	22.08	12.26
Indirect Overhead Costs	12.61	12.61	12.61	12.61	12.61	12.61
Total	$ 65.25	$ 90.40	$ 87.23	$ 63.85	$ 60.21	$ 31.45

[1] There was a minimal quantity of parsnips washed and graded at the plant in 1986 and 1987. Accordingly, we treated this product as being farm packed in each of the last three years.

TABLE 6.5

B.C. Coast Vegetable Co-operative Association
Processing Potatoes
Total Costs
$ Per Net Ton
1986 - 1988

	WASHED AND GRADED AT PLANT			HANDLED ON FARM		
Product-Specific/Direct	1986	1987	1988	1986	1987	1988
Receiving	$ 1.99	$ 2.20	$ 2.04	$ -	$ -	$ -
Washing and Grading	21.31	23.68	24.89	-	-	-
Shipping	1.45	1.59	1.48	-	-	-
Marketing Commission Fees	.95	1.00	1.05	.95	1.00	1.05
Sub-total	$25.70	$28.47	$29.46	$ .95	$ 1.00	$ 1.05
Not Product-Specific/Indirect (Plant Costs)						
Insurance and Property Taxes	$ 1.74	$ 1.42	$ 1.81	$ -	$ -	$ -
Plant Depreciation	.52	.43	.47	-	-	-
Repairs and Maintenance	7.01	8.52	7.05	-	-	-
General Warehouse	10.19	10.81	9.98	-	-	-
Equipment Depreciation	2.94	3.57	2.77			
Sub-total	$22.40	$24.75	$22.08	-	-	-
Not Product Specific/Indirect Overhead						
Administration	$ 9.13	$ 9.16	$ 7.70	$ 9.13	$ 9.16	$ 7.70
Building Depreciation	.06	.05	.06	.06	.05	.06
Field Staff	.55	.44	.48	.55	.44	.48
Sub-total	$ 9.74	$ 9.65	$ 8.24	$ 9.74	$ 9.65	$ 8.24
TOTAL	**$57.84**	**$62.87**	**$59.78**	**$10.69**	**$10.65**	**$ 8.29**

V10/10

Table 6.3 indicates the per ton costs of each of these expenses for the years 1986 to 1988.

SUMMARY OF DETAILED COST ANALYSIS

Appendix 4 provides a detailed breakdown of unit costs for fresh market products for 1986 to 1988. Table 6.4 summarizes these costs for regular products, i.e. fresh market crops not packaged in poly bags.

As indicated, product-specific costs accounted for the major portion of unit costs for all products between 1986 and 1988, with the exception of farm-packed parsnips and cabbage for which allocated plant and overhead expenses accounted for the major portion of the costs of handling these products. In each of the last three years, product-specific costs constituted between 42% and 47% of the costs of handling potatoes, onions and rutabagas. In comparison, product-specific costs comprised 53% to 60% of the costs of handling carrots and beets. Direct product expenses account for a larger portion of the costs of beets and carrots because of the higher labour requirements for washing and grading these vegetables.

Table 6.5 summarizes the total costs per net ton for processing potatoes washed and graded at the plant and processing potatoes that are handled on-farm. As shown, the costs of receiving, washing and grading, shipping and marketing commission fees (product-specific, direct expenses) comprised between 44% and 49% of the total costs of washing and grading processing potatoes at the Co-operative in 1986 to 1988. In comparison, allocated overhead expenses accounted for more than 90% of the total costs attributable to processing potatoes that were handled on the farm.

VII. MARKETING SYSTEMS IN OTHER JURISDICTIONS

COMPARISON AND COSTS

To examine alternative approaches for the Co-operative, we interviewed vegetable packer/graders/marketers in other jurisdictions including Alberta; Manitoba, Ontario and Washington State. In this chapter we first present a discussion of these systems and then a comparison of costs and operating data with B.C. Coast.

ALBERTA

Potatoes and other root crop vegetables are handled by two separate marketing boards in Alberta. The systems for handling these products differ although some packers do handle both potatoes and root crop vegetables. This marketing system has only been in place for about one year and has not yet stood the test of time, however, both the Boards and packers expressed satisfaction with its operation.

Potatoes

The eleven potato packers in Alberta make slightly differing arrangements with their suppliers. However, in general, they work as follows:

- the Board sets the weekly price, after consultation with the packers;
- the payout to the grower is the Board price less a $55.00 per ton plant charge for acceptable product, in other words, this is a net ton payout. There is an additional $20 per ton charge for cooling on early potatoes;
- cullage rates vary in the 10%-20% range as some growers pre-grade their product;

- culls belong to the plant, who currently sell them to peddlers for about $5/cwt ($100/ton);
- at this stage, the packer owns the potatoes and decides how to price them according to the market. The plants that we spoke to packed 50%-60% of their product in poly;
- the packers sell at market price, however they have determined their packing costs or up-charges such that, on average, they will be profitable. These up-charges, added to the net grade out cost, are, for instance:

poly 10/5 lb.	$76
poly 5/10 lb.	$56

- on average, across all pack sizes and types (poly, bulk etc.), Alberta packers estimated that their costs, including a reasonable return, are $70 per net ton to package and sell potatoes (costs after washing/grading);
- labour costs per hour vary among packing houses as does efficiency and cost per ton. These costs are illustrated in Table 7.1 for two of the plants that provided adequate information. In general, non union wages plus benefits are in the $8-10 per hour range and unionized plants in the $11-12 per hour range.

Vegetables

The majority of growers grade and pack their own vegetables in Alberta. There are 3 or 4 large packers who are also owned by growers. Some of the smaller growers deliver their pre-packaged product to the larger ones for distribution and delivery to the wholesaler. Packers make various arrangements with growers depending on the product. For instance with carrots, one packer explained that they receive the field-run carrots from the grower and after hydro-cooling and washing, they are graded. The packer pays $83.00 a ton for #1's and $57.00 for jumbos and nothing for culls. Another packer charges $10.00 per pallet for a marketing fee for vegetables that have been pre-washed, graded and packed on the farm. This packer delivers to wholesalers.

General

All of the operations contacted in Alberta continue to operate even when they are out of local product. All of the packers, including those acting as co-operatives and those owned by individual producers, buy product from other jurisdictions in the off-season. At the present time, some of these packers are running California new potatoes. Also, they occasionally pack oranges and U.S. onions or any product that will go through their plant in order to use their facilities efficiently and profitably.

Packers in Alberta strongly advised against fragmenting the B.C. industry into many farm wash, grade and pack operations. The opinions expressed by individuals with experience in marketing vegetables (recall they are mostly farm packed), was that variation in product quality occurs and that centralized systems are more efficient than farm-based operations. They were hoping to centralize more of the vegetable functions in the future.

MANITOBA

Of all the comparative systems examined, Manitoba's is the most similar to that of British Columbia. Manitoba has a vegetable production system similar to that of this province and the Manitoba Vegetable Marketing Board maintains a central packing house and distribution centre. There are about 60 growers delivering to the Board facilities, of which about 35 are potato growers.

The Manitoba facilities usually operate on a 12 month basis either on local production or on imports. Total sales through the Board were approximately $18 million in the 1988/89 year. Approximately 33,000 tons of table potatoes were sold by the Board, of which 47% was shipped either directly from the farm to the customer or was packaged on farm for shipment by the Board.

The Manitoba Board sells products that are packed and delivered in three different ways:

- packed on the farm and delivered directly to the buyer;
- packed on the farm and delivered to the Board for delivery to the customer; and
- packed at the Board plant.

The smallest portion of the products are packed on the farm for direct delivery. In the case of potatoes, this amounts to approximately 15% of sales, onions 33% and carrots 9%. Most of the direct sales are made from larger

farms. Sales are arranged by the Board and orders may be filled at the farm and delivered, usually in full truck-load lots. In the case of potatoes, onions and carrots, these farm-to-customer deliveries are in bulk pack. For instance, potatoes are in 75 lb. bags. In order to conduct this sales service and also the collection of invoices and payments to the grower, the Board charges a handling charge which differs by crop but averages $9.60 per ton. Each of the bags or containers used by the growers for packing on the farm would have the Board's label and would state that it was packed by (the name of the grower). Also, bags are tagged with a grower number. The Board reports very few customer complaints or returns. Any returns are charged back directly to the grower. Customers that are served directly may be large wholesale retailers like Safeway or out-of-province locations.

Another category of packing is for the product to be packaged on the farm and delivered to the Board for further delivery to customers. The percentage that is done this way is: potatoes 32%, onions 31% and carrots 91%, for example. In this instance, only bulk packs for potatoes and onions are done at the farm level, that is, anything 50 lbs. or larger (in Manitoba the 75 lb. bag is relatively common). The carrots are cello packs and bulk. This category of farm pack is utilized for most of the other vegetable crops that are carried by the Board which includes cole crops, salad crops and other vegetables. Once again, the packages are labelled with the Board's insignia and "packed by" whoever it was. The handling charge of $9.60 per ton applies to this type of product also.

The third way in which product is received and handled is either in an ungraded state for washing and grading or in a washed and graded state for packaging. Only onions and potatoes are graded and packed at the plant. Fifty-three percent of the potato sales go through this process and 36% of onions. All of the poly packs sold by the Board are packed at the Board facilities. Discussions with growers confirmed that they are favourable to this relationship because the cost of efficient and accurate packaging equipment is beyond the financial capability of most growers whereas the cost of establishing a washing and grading line is not as high.

About half of the potatoes received at the plant require washing and grading, for which there is a charge of $41.33 per gross delivered ton. The cull rate is very low at about 5% due to the prevalence of washing and grading facilities on the farms (termed "pre-grading") and the fact that growers do not want to pay $41.33 for product that is going to be culled out. The Board charges $38.72 per net ton to wash and grade number one potatoes and $41.39 per ton for #2's. On all products there is added a handling charge of $9.60 per saleable ton. The cost for packaging is recovered from the market price and is not a direct charge against individual growers. In other words, it could be looked at as a pooled cost. The cost for packaging onions is $70.00 per ton and for potatoes it depends upon the package that they are put in to as follows: 5/10 lbs. at $50.00/ton, 10/5 lbs. at $54.40/ton.

The revenue of the Board comes from several sources including rental of space to other marketing boards; and the handling charge which includes administration, receiving and shipping, maintenance and selling charges. This charge is calculated annually and this year they intend to examine this charge

in October to see if it has kept up with the costs of operation for the year to date. If it has not kept up, the charge would be increased in order to make up the shortfall before the year-end in June.

A third source of income to the Board is the custom processing of products such as oranges, grapefruits and other fruit products for customers such as Canada Safeway or the repackaging of imported product from the United States. Products such as citrus fruits which are brought in by Safeway sometimes have to be repackaged or regraded and the Board does this on a custom basis for $100.00 per ton or $25.00 per hour. In the 1988/89 year, a substantial contribution to the bottom line of the Board was the repackaging of potatoes and onions from the United States. During the slow time of the year when local stocks are insufficient to cover needs, potatoes are imported in bulk 100 lb. sacks for reprocessing. In the past year, this reprocessing contributed approximately $100,000 net profit to the bottom line (which is a direct coverage for overhead).

The Board operations are unionized and the average hourly rate, including benefits, is $12.36 per hour. The Board has an office staff of seven.

Processing Potatoes

Processing potatoes do not pass through the Board facilities nor does the Board enter into price negotiations between growers and processors. The major french fry operators in Manitoba do not require washing or grading of

their product prior to delivery. All arrangements for contract and payment are made directly with growers. Campbell Soups and Old Dutch Potato Chip Plant require the product to be graded prior to delivery.

ONTARIO

There are approximately 380,000 tons of potatoes grown annually in Ontario with about 50% being marketed fresh. The Ontario Fresh Potato Marketing Board sets weekly prices for potatoes through a conference call with various industry participants such as retailers, buyers, growers and wholesalers. Processed potatoes are controlled through the Ontario Potato Growers Marketing Board. A recent report by Coopers & Lybrand for the Ontario Fruit and Vegetable Growers Association describes the distribution system as follows:

> "The most significant movement of fresh potatoes to the market is through packing houses. Most of these packing facilities are part of the grower's operations; others are independent packing houses. The growers who have their own packing facilities generally sell directly to the retail chains. The independent packers/shippers target these same buyers, as well as export markets."

Discussions with the Ontario Fresh Potato Marketing Board indicate that they take no active role in the actual selling or marketing of the product. The major competitor for Ontario potatoes is Prince Edward Island who have a highly developed market, particularly for Russets. The Prince Edward Island potato is to Ontario as the Washington potato is to British Columbia and acts as the price setter.

A summary of the comments and recommended improvements from the Coopers & Lybrand report suggests that:

- there are too many small grower/packers in Ontario which leads to inconsistent product and availability;
- the Board is ineffective in its regulation of the industry therefore price cutting takes place;
- the quality and size of the Ontario product is often inconsistent and storage facilities are not efficiently used by individual growers;
- an improvement would be to have a one-desk selling concept similar to that of British Columbia.

We interviewed a member of the Ontario Fresh Potato Marketing Board. This individual is considered to be one of the larger packer/shippers in the province. He produces about 1,000 tons of his own production per year and also handles a small quantity of other growers' potatoes. He has a facility that can wash and grade 50 tons per day with a 10% cull rate. He estimates that his average cost per net ton is $70.00 from storage through to shipping. He reported that a recent industry survey suggests that the average cost of washing, grading and packing potatoes is $66.00 a ton. He feels that his operation is not efficient due to the size and equipment but he still makes money at that rate. His labour is not organized as it is mostly imported Jamaican farm workers. The wage rate with benefits and housing averages $8.00 an hour although the actual wages paid average $5.15 per hour. This grower packs in poly bags, 50 lb. cartons, bags and baskets. These costs are low as most of the packing operations in Ontario are done on farm. Many farm operators tend to report cash costs and may not include depreciation or an adequate wage for management.

TABLE 7.5

WASHINGTON STATE PACKERS

Operating Information

	Plant 1	Plant 2	Plant 3	Plant 4
Ave. Gross Tons/day (from storage)	300	325	100	250
% Culls	35	37	30	25
Net Tons Packaged	195	205	70	188
Pack Distribution (%)				
Poly	45	41	30	40
Cartons/other	10	12	15	10
Count	35	40	35	35
100# jute	10	8	20	15
No Plant Labour	32	52	35	40
$/hr. incl. Benefits	$5.02	$5.02	$5.31	$4.72
Hours of Labour/ton (wash, grade, pack)				
Gross	1.17	1.28	2.80	1.37
Net	1.31	2.03	4.00	1.82
$ of Labour/Ton				
Gross	5.88	6.43	14.87	6.46
Net	6.58	10.03	21.24	8.58

Plants 1, 2 and 4 relatively new
Plant 3 old

WASHINGTON STATE

The Washington State potato industry is very different from that of British Columbia. The industry is concentrated in the Columbia Basin and predominantly grows a Russet variety of potatoes. Eighty-five to eighty-seven percent of the production goes to processing, leaving 13% to 15% for the fresh market. This means that the Washington potato packer can high grade a very fine quality potato from a large volume from which to select. Moreover, the quality of the Washington Russet is excellent due to the long growing season, ample irrigation and fine soil quality. All of these factors combine to make a very high quality, economic product against which it is difficult for the B.C. growers to compete.

Many of the large packing houses in Washington State which are close in size to the Co-operative, are owned by large growers. These packing houses are supplied mostly by the growers' production although they will buy outside.

Several different grower/packer arrangements exist. One of these is the pre-season contract wherein the grower agrees to deliver a specific volume of product at a specific pre-season, set price. He carries the risk that he has agreed to a price in a year when the prices may actually go up in the marketplace, however, he also is assured of a floor price. Under this system, the price will be based on a cost of production with a quality incentive depending upon:

- The percentage of # 1's;
- The percent free from bruising;
- The percent in the 8 to 14 oz. size; and
- Specific grades.

Another means of purchasing potatoes is on consignment. In this arrangement, the packer agrees with the farmer before the season to pack and sell his produce. The grower owns the potatoes all the way through the system but is guaranteed a floor price in the market. Under this system, the grower may actually sell his product at a higher price to someone else if he does not feel that he is going to get as good a price from the packer he is consigning to.

Packers may just buy on the open market from growers. This strategy accounts for a small percentage of the industry as it is difficult to secure sufficient product to ensure efficient plant operations.

We interviewed seven packing houses in the Columbia Basin, several of which provided detailed operating data. Some packers were unable or unwilling to supply data in sufficient detail or format to be comparable.

Also, we reviewed the information from the anti-dumping hearings for pertinent data on packing house costs. The latest information in this submission was 1982 data, and even this was from jurisdictions other than Washington State or was for processing potatoes. Researchers at Washington State University (Pullman) and at Oregon State University (Corvallis) confirmed that the 1982 information was all that they had on packing costs as the subject had not been researched since that date.

TABLE 7.4

U.S. GROWER CHARGES - WASHINGTON STATE POTATOES

$/Net Ton Sold

	Plant 1	Plant 2	Plant 3	Plant 4*
100 lb. Sacks	85.00	59.00		
50 lb. Counts	101.50	80.00		
Poly 5/10	113.00	80.00		
Poly 10/5	139.00	94.00		
General			93.20 for all packs	$11.80/gross tons (15.73 net) plus all direct plant labour costs
Sales (brokerage)	6.00	6.00	6.00	6.00
Culls	$24 charge grower get difference between charge and sale	Belong to plant	Belong to plant	Belong to grower - delivery charge to processor

*very little custom work

Pertinent information on Washington operations include:

- it appears that each individual Washington State packing house makes its own separate arrangement with growers vis a vis charges and how to handle culls etc. These charges vary greatly and are illustrated for four plants in Table 7.4. Most packers interviewed depended on their own potatoes with custom work representing less than 20% of their throughput;

- the data illustrated for four of these plants in Table 7.5 are for potatoes from storage and indicate the size of these plants ranging from 100-325 gross tons of throughput per day. Each of these plants could process an additional 50% throughput in field run product;

- the high cull rate, averaging over 30%, reflects the opportunity to market these culls at $30-45 per ton (depending upon dry matter content) to processors (dehydrators, hashed borwn and french fry plants). Each plant differs in its treatment of culls vis a vis the grower, and this is reflected in the rate of grower charges illustrated in (Table 7.4):

  - plant with highest charges, return to the grower any of the sale price above their $24/ton (Cdn) cull grading charge;

  - other plants with lower per ton charges keep all culls; and

  - another plant that uses a direct cost/charge system charges for delivering the culls to the processor but the grower owns them.

- poly packs and count boxes account for 75%-80% of the pack;

- labour costs are comparatively low as some of the plants are unionized and pay minimum wage at about $5.00 (Cdn) per hour;

- none of the packers would reveal their detailed financial information, however they all confirmed that they are comfortably profitable at the charge rates illustrated in Table 7.4. Comparison with B.C. Coast is discussed further in this report.

TABLE 7.1

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rates and Handling Time for Potatoes

B.C. Coast vs. Alberta

	B.C. Coast	Alberta	
		Plant 1	Plant 2
$/hour plant labour (incl. benefits)	$14.50	$11.34	$7.98
Person hours per net ton to wash, grade and pack	2.35	2.00	2.96
Cull Rate (average)	28%	20%	10%
% in poly bags	25%	50%	60%
$/net ton to wash, grade and pack	$34.08	$22.68	$23.62

Direct comparisons of person-hours by function were not possible because this data was not available from Alberta operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 55% pack-out into poly bags in order to compare the B.C. Coast operation to Alberta producers.

TABLE 7.2

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rate and Handling Time for Potatoes

B.C. Coast vs. Manitoba

	B.C. Coast	Manitoba
$/hour plant labour (incl. benefits)	$14.50	$12.36
Person hours per net ton to wash and grade	1.19	1.00
Person hours per net ton to pack	1.24	1.22
Cull Rate (average)	28%	5%
% in poly bags	25%	90%
$/net ton to wash, grade and pack	$35.24	$27.44

Direct comparisons of person-hours by function were not possible because this data was not available from Manitoba operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 90% pack-out into poly bags in order to compare the B.C. Coast operation to Alberta producers.

COMPARISON OF B.C. COAST WITH OTHER JURISDICTIONS

Tables 7.1 - 7.3 present data comparing the labour rates and efficiency (hours/ton to wash, grade and pack) of B.C. Coast and plants in Alberta, Manitoba and Washington.

Each operation has a different mix of packaging and sizes (poly, bulk, sacks, count etc.) This packaging mix affects the total hours required, per net ton, to wash, grade and package potatoes. For example, poly-bagging requires more labour than bulk packaging into boxes. Because we had detailed costing data by pack type for B.C. Coast but not for other operations, we had to adjust the hours/net ton for B.C. Coast in each of the tables to reflect a packing mix that was comparable to the mix at the plants against which B.C. Coast data was compared. This adjustment leads to differing hours/ton for B.C. Coast in each table.

Our observations are as follows:

Alberta - Table 7.1

- The B.C. Coast cull rate of 28% is higher than the 10-20% experienced in Alberta where they cull more on farm;
- B.C. labour rate is $4.84 per hour higher than Alberta's;
- B.C. Coast is 5.2% more efficient than the average of the Alberta plants with 2.35 person-hours required, per net ton, to wash, grade and pack compared to 2.48 person-hours in Alberta.

Manitoba - Table 7.2

- B.C. Coast cull rate at 28% is five times that of Manitoba where most growers pre-grade prior to delivery;
- B.C. Coast labour rate is $2.14 per hour higher than that for Manitoba;

TABLE 7.3

B.C. Coast Vegetable Co-operative Association
Comparison of Labour Rates and Handling Time for Potatoes

B.C. Coast vs. Washington State

		Washington			
	B.C. Coast	Plant 1	Plant 2	Plant 3	Plant 4
$/hour plant labour (incl. benefits)	$14.50	$5.02	$5.02	$5.31	$4.72
Person hours per net ton to wash, grade and pack	2.20	1.80	2.03	4.00	2.02
Cull Rate (average)	28%	35%	37%	30%	25%
% in poly bags	25%	45%	41%	30%	40%
$/net ton to wash, grade and pack	$31.90	$9.04	$10.19	$21.24	$9.53

Plants 1, 2 and 4 are relatively new while Plant 3 is old.

Direct comparisons on person-hours by function were not possible because this data was not available from Washington operations. Accordingly, we adjusted the person-hours required at B.C. Coast to reflect a 40% pack-out into poly bags in order to compare the B.C. Coast operation to Washington producers.

TABLE 7.6

B.C. Coast Vegetable Co-operative Association

Comparison of Grower Charges

	Agency Fee	Service Charge	Other	Total Charges	Packaging[1]	Total Packaged Grower Cost	%[4]
B.C. Coast							
Standard	$11.50	$45.83	$12.60	$69.93	$50.00	$119.93	100.0
Count Pack	$11.50	$48.61	$29.60	$89.71	$50.00	$139.71	116.5
Manitoba (poly)							
Washed & graded in plant	$ 9.60	$43.40		$53.00	$52.20	$104.20	86.9
Packaged only in plant	$ 9.60			$ 9.60	$52.20	$ 61.80	51.5
Alberta (poly)		$55.00		$55.00	$66.00	$121.00	100.9
Washington	Sales[2] (Brokerage)						
Poly - Plant 1	$ 6.00		($13.00)[3]		$126.00	$119.00	99.2
2	$ 6.00				$ 87.00	$ 93.00	77.5
Count - Plant 1	$ 6.00		($13.00)		$101.50	$ 94.50	78.8
2	$ 6.00				$ 80.00	$ 86.00	71.7
Flat Rate - Plant 3	$6.00				$ 93.20	$ 99.20	82.7

1. Packaging is a cost to the grower pool not actually a charge but is shown in order to show actual charges in each jurisdiction.

2. Washington State packers charge $6.00/ton (brokerage) to cover all sales costs including salaries.

3. This packer charges for handling culls but pays back the diference between cull sales and the handling charge. Estimated at 35% cullage and value of $40.00/ton.

4. Total cost as % of B.C. Coast total for standard pack.

- B.C. Coast is 19% less efficient in washing and grading and 1.6% less efficient in packaging than Manitoba, based on person-hours per ton. This is very reasonable as 75% of Manitoba potatoes are delivered pre-washed and graded.

Washington - Table 7.3

- B.C. Coast's cull rate of 28% is lower than the average 32% for Washington. However, Washington packers cull product that B.C. Coast may not as they receive $40.00 per ton for culls, whereas B.C. Coast pay up to $25.00 per ton to have the culls removed;
- B.C. Coast labour rate is $9.48 per hour higher than that for Washington packers;
- At $9.48 per hour premium over Washington labour rates it costs B.C. Coast $22.11 per ton more to wash, grade and pack potatoes than it does at the more efficient Washington plants interviewed.
- Compared to the three efficient plants (also new and large), B.C. Coast is 12.8% less efficient as measured by person-hours per net ton to wash, grade and pack.

In summary, the labour efficiency of B.C. Coast (person-hours per net ton wash, grade and pack) was close to that of comparable plants in Alberta, Manitoba and Washington although the cost per hour of labour was significantly higher.

Comparison of Grower Charges

Table 7.6 compares grower charges between plants in other jurisdictions and B.C. Coast. This table illustrates that:

- Total B.C. Coast grower charges are comparable to those in other jurisdictions, particularly in Alberta;
- Comparing B.C. standard pack with poly rates shows that B.C. Coast is only $16.20 higher (15.6%) than Washington. One should recall that B.C. Coast labour rates are $9.48 per hour higher than those in Washington.
- The relatively high charge rate in Washington compared to their low labour cost may account for their reported higher profitability.

VIII. ANALYSIS OF ON-FARM PACKING

The subject of washing, grading and/or packing of products on the farm is being considered by members of the Co-operative. It is anticipated, by those members, that the costs of on-farm processing will be lower than the present charges for those services by the Co-operative. In order to assess the costs, we conducted interviews with growers who perform these functions on Vancouver Island, in the Interior of the province and in Ontario to determine their on-farm processing costs. The data collected was variable and we had no way to confirm it; however, it was the best estimate by the individuals interviewed. The costs of processing on the farm will vary by:

- Type of crop grown;
- Volume of product packed;
- Hours of labour per ton;
- Dollars paid per hour; and
- Costs of capital equipment, buildings and other facilities.

CAPITAL COSTS

The capital cost estimates varied greatly among respondents. Almost all of the respondents stated that when they started into the washing, grading and packing on-farm, they did so in a very limited way and manufactured their own washing and grading equipment. Most of the individuals that we interviewed have since grown to handle larger quantities of production than they originally started out with. For instance, the range of potato volume handled by the growers interviewed ranged from 600 to 2,800 tons per year.

Respondents stated that their capital costs varied from about $4,000 to $200,000 for equipment alone not counting buildings. Also, we enquired as to what the individuals estimated it would cost for them to set up an efficient operation today. In any manufacturing or processing operation, there is usually a trade-off between capital costs and labour. That is, the more automated the machinery, the higher the capital cost of that machine will likely be but also the lower the labour input. Therefore, if labour is relatively inexpensive, it may not pay to invest a substantial amount of money in equipment.

It is estimated that a grower could set up a 1,200 to 1,500 ton per year potato washing and grading line for a minimum of $12,000 to $15,000 if they were able to make a large amount of the equipment themselves and/or purchase used equipment and a 5-700 ton line for $5,000 to $10,000. It is also estimated that packaging equipment could be obtained for somewhere in the range of $15,000 to $30,000 depending upon the speed of operation required and the variability in package size. If the same equipment were to be purchased new, then it has been estimated by our respondents that the cost would be closer to $100,000 for a complete wash, grade and packing line for 1,500 tons/year.

It is accepted industry practice to amortize the equipment value on a straight line basis over 20 years.

Further costs will be incurred in construction of a suitable building and installation of appropriate water, utilities and pollution control systems. In areas that are not on city water, the washing function could become a problem as

TABLE 8.1

B.C. Coast Vegetable Co-operative Association
Comparison - Farm Pack Person-Hours Per Ton*

Crop & Annual Product Tons		Wash/Grade Hours Gross Ton	Wash/Grade Hours Net Ton	Packaging Net Ton	Total Hours Net Ton
Potatoes Grower 1	700	0.60	0.80	1.00	1.80
Grower 2	2,800	0.80	1.00	1.00	2.00
Grower 3	1,200	0.80	1.07	1.07	2.14
Grower 4	800	0.80	1.00	1.00	2.00
Grower 5	500	-	-	-	1.33
Grower 6	1,400	-	-	-	3.33
B.C. Coast		1.19	1.67	1.24	2.91
Carrots	120 - 200				8.20
Onions	250				5.00

*Hours as estimated by growers interviewed.

wells may not be sufficient to supply adequate quantities of water. Also, disposal of the wash water will most likely require a settling pond prior to further disposal of the water into water courses, onto the fields or into a sewage system.

Onions

It was estimated by the growers interviewed that it cost about $10,000 to $15,000 to set up a grading and bagging operation for 250 to 300 tons per year of onion production.

Carrots

The growers who process their own carrots estimated that for 100 to 120 tons per year of carrots, it would take about $20,000 to $25,000 to set up the equipment and grading room. This would include doing some building of equipment for one's self.

LABOUR COSTS

The labour hours per net ton (tons of saleable product) varied according to different operators estimates. Table 8.1 illustrates the hours per ton estimates for farm washing, grading and packing for potatoes, carrots and onions. The estimate for potatoes is significantly lower than the hours per ton reported by the Co-operative. Although there is consistency in the hours reported, our experience in measuring grower cost of production hours suggests that they are usually underestimated by the people involved. It is likely that

The hours for carrots and onions are slightly higher than those reported by the Co-operative. Unfortunately, none of the grower respondents keep detailed records of production and hours of operation, therefore these numbers are best estimates.

All of the growers interviewed claimed that they were able to get sufficient labour at $6.00 to $8.00 per hour, but they thought that it was because they lived in rural communities where there was little competitive employment. In the Lower Mainland area, the availability of labour at those rates may not be as high although only individual growers themselves will know, from their experience, what the availability of labour is. These labour rates and hours only illustrate the direct labour on the line and do not include the supervisory time required by the grower or his appointed supervisor. Most growers interviewed believe that if they are not actively involved in the supervision of the washing, grading and packaging crew, that productivity drops off drastically and costs consequently increase. Also, these costs do not include the costs of delivery of the finished product to a central warehouse or to the customer. However, this cost is likely to be similar to the cost that is now incurred by the grower in delivering field run product to the Co-operative for processing.

Table 8.1 illustrates the estimated hours to wash, grade and pack potatoes, carrots and onions on-farm. The average plant labour rate for the Co-operative is $14.50 per hour. It is probable that labour to perform wash, grade and pack functions on the farm could be hired for $8.00 per hour. The differential between these rates is $6.50 per hour.

TABLE 8.2

B.C. Coast Vegetable Co-operative Association
Potential Labour Savings by Washing, Grading & Packing On-Farm*

$/Ton

1. Assume grower's time estimates in Table 8.1 are correct.

Potatoes

Washing, grading	(gross ton)	$10.86
	(net ton)	16.22
Packaging	(net ton)	9.98
Total	(net ton)	$26.20

Carrots

Onions

2. Assume grower's hours are the same as the Co-operative.

Potatoes

Washing, grading	(gross ton)	$ 7.74
	(net ton)	10.86
Packaging	(net ton)	8.06
Total	(net ton)	$18.92

*On farm labour rate $8.00 estimated compared to $14.50 per hour for B.C. Coast. Also, growers 4 and 5 (Table 8.1) time estimates dropped to make measurements more precise.

Table 8.2 illustrates that the potential savings by conducting some of the plant functions on the farm, even at the same hours per ton as the Co-operative, are significant. Net ton figures are dependent upon the cull rate, therefore in assessing wash and grade savings the gross charge may be more comparable.

If the washing and grading function performed on-farm could be done in 0.80 hours per ton (Table 8.1) as opposed to 1.19 person-hours at the Co-operative, coupled with a rate differential of $6.50 per hour, the savings could be $10.86 per ton. Even if the grower operated at the same time requirement as the plant, the savings would be $7.74 per ton.

QUALITY CONTROL OF FARM PACK

It is reasonable to assume that there will be a variation in quality and uniformity of pack among a number of grower packers. This is most likely to happen if there is no significant penalty for poor grading. As reported in Chapter IV, other agencies in British Columbia have developed systems to severely penalize growers who do not produce an appropriate quality of pack. This system includes the grower having to remove their product from the store or being charged back a cost for the poor grading. Interviews with the trade as reported in Chapter V, illustrate that the trade does not want to have to do these type of actions in the Lower Mainland where over 50% of the product is delivered to a central warehouse and then out to the store where the integrity of the individual grower package may be lost and the tracing of poor grading penalties would be most difficult.

However, the system used by other agencies and the Manitoba Board suggest that growers quickly learn the trades' standard and produce an acceptable product. The marketplaces will eliminate poor packers.

PACKAGING

The cost of packaging can become a significant capital cost to an individual grower as the reasonable minimum order quantity per package size is about 25,000 pieces for poly bags. Considering that the grower would have to stock 5, 10, 25 pound poly bags plus cartons or sacks, the cost can become significant. In particular, this cost can be significant if changes are required on the printing of the bag. One of the ways around this is for the Co-operative to supply bags which the grower could stamp with an individual grower number for identification and quality control purposes.

ADVANTAGES OF GROWER WASHING, GRADING AND PACKING

The following advantages may occur to the grower by doing on-farm processing:

- Products may have lower hours per ton;
- Labour rates should be lower than those at Co-operative; and
- The grower has greater control over the handling of his own product;

DISADVANTAGES

The disadvantages of on-farm processing include:

- Considerable outlay of capital for the grower;
- Time of the grower/operator in supervision;

- Hiring of suitable work staff;
- Cost and inconvenience of stocking packaging;
- More responsibility on the grower and less time for other growing functions; and
- Need to be prepared to pack the product on demand of the trade.

CONSTRAINTS TO AND POTENTIAL PROBLEMS OF FARM PACK IN THE LOWER MAINLAND

The constraints and potential problems of packing product on the farm in the Lower Mainland include:

- Capital costs and availability of equipment. If all Co-operative members decided to get into farm pack (as differentiated from washing and grading) at the same time, it is unlikely there would be sufficient used equipment available and many would have to turn to new equipment in order to set themselves up;
- The availability of appropriate labour may be a problem; and
- The availability of adequate water supplies and the ability to dispose of that water without excessive cost.

IX. CONCLUSIONS AND RECOMMENDATIONS

In this chapter, we present the conclusions of our research and the recommendations. Also, we present a plan of action to be undertaken by the Co-operative to implement change. The conclusions are printed in bold type with the discussion and recommendations following them.

1. **The market served by the B.C. Coast Vegetable Co-operative is not directly comparable with the market served by other agencies in B.C. Agencies on Vancouver Island and in the Interior deliver significant quantity of their product directly to retail stores and service very little of the food service trade. The B.C. Coast sells 55% of its product to retail chain wholesalers and 10% of its production to processors. The food service industry is a significant customer of B.C. Coast. The B.C. Coast's major customers indicated clearly that they do not want variability in the products that are delivered. These customers do not want individual store deliveries, as are done in other jurisdictions, and are not interested in picking up product directly from individual producers. However, they would consider the opportunity to choose individual grower/suppliers with whom they could contract their business.**

   This requirement of the customers effectively rules out the option of direct delivery of product from the farm to retail stores and curtails farm to wholesale delivery unless it is arranged in full loads as an exception to the rule. The concept of a customer choosing an individual grower or supplier could disrupt the co-operative marketing approach. However, it seems to work in Manitoba. The only producers that would be penalized by this system would be those not producing a satisfactory quality. If individual growers had their number or name on a package or container, their own quality would be identified by the buyer and this might lend itself to improving the overall quality of production as only the better producers will succeed in the marketplace.

2. **In general, customers expressed their satisfaction with the service, quality and reliability of most of the products from the Co-operative. The primary demand for products of the Co-operative is not increasing. Therefore, there is little opportunity to expand volume without changing the market presentation.**

   Management could identify niche or speciality markets that could provide opportunities for members to increase their financial returns from the market or expand the market for the products they produce.

Such opportunities might include specialty crops or varieties, or the production of organic and natural products. The latter development might lead to markets for export.

Management needs to identify the needs of the various customers such as specific varieties, custom packing, different packaging needs, special promotions, etc. and provide clear and timely information to growers such that they can plan to service these needs, where possible.

3. **The plant experiences considerable under-utilization during the off-season. Fixed costs do not decrease with less product but they are spread over less tonnage.**

Management should undertake a thorough review of food and non-food product opportunities that could be packed in the plant during the off-season. Such opportunities might include packaging or regrading of citrus fruits for retail customers, the packaging of nuts or out-of-season products from other jurisdictions. In the text we reported on the $100,000 contribution to bottom line profit that was reported to us by the Manitoba Vegetable Marketing Board for the repackaging of potatoes and citrus fruit. Prior to entering into a similar system of packaging import product, B.C. Coast would need to determine what margins could be generated by doing so, as price spreads on imported poly pack and bulk potatoes do not differ significantly in B.C.

We could not determine what sort of contribution to overhead could be created by repackaging product as there is a lack of a detailed costing system that could be applied to this endeavour.

4. **The processing crop market represents 10% of the volume of the Co-operative. Nalleys, in particular, may impose more stringent yield or cull rate guidelines on the product they are purchasing or may even consider relocating their production to another area.**

In order that growers are aware of any potential changes in this market, all processing potato growers should meet with Nalleys management to explore important issues such as: changes in varieties; grade-out rates; potential changes in corporate plans.

5. **The cull rate at B.C. Coast of 28% on potatoes is higher than Alberta and Manitoba where much of the culling takes place on the farm. Washington packers average 32% culls on Russets, however, they also sell their cull potatoes for approximately $40.00 per ton to processors. B.C. Coast does not realize any return for culls and sometimes has to pay to have them removed.**

The Co-operative urgently needs to find a buyer for cull potatoes. One company that was interested in processing cull potatoes would have paid $25.00 per ton for the product. At $25.00 per ton, the Co-operative would realize between $250,000 - $300,000 per year. This

would make a substantial contribution to the financial well-being of the organization. At the present time the company interested in processing those potatoes is attempting to raise financing to set up a plant. The Co-operative should use all of its influence to assist that company in getting financing.

6. **The efficiency of the Co-operative can be measured by the hours required per ton to wash, grade and pack. Using the example of potatoes, the B.C. Coast plant is not out of line with other jurisdictions considering the differences in operating procedures. The table below illustrates those findings.**

Efficiency of B.C. Coast vs. Other Jurisdictions
(Wash, Grade and Pack Potatoes)

Alberta	+ 5.2% more efficient
Manitoba	- 9.5% less efficient
Washington (avg.)	+ 10.6% more efficient
(3 Most Efficient)	- 12.8% less efficient

7. **The average plant labour rate, including benefits, of $14.50 per hour at the B.C. Coast is higher than in any of the other jurisdictions examined, as shown.**

Labour Rate B.C. Coast and Other Plants
$/Hour Including Benefits

	$/Hour	Difference from B.C. Coast $/Hour
B.C. Coast	14.50	
Alberta	9.66	- 4.84
Manitoba	12.36	- 2.14
Washington	5.02	- 9.48

As an example, at a $9.48 per hour premium over Washington labour rates, it costs B.C. Coast $22.11 per ton more to wash, grade and pack potatoes than it does at the more efficient Washington plants.

8. **Grower charges at the B.C. Coast were quite comparable to those in other jurisdictions. Charges for poly pack in Alberta were higher than for B.C. Coast. Even the charges in Washington state were reasonably close, particularly considering the higher labour rates in British Columbia. On average, B.C. Coast was 15.6% higher on grower charges for the B.C. standard pack compared to poly rates in Washington.**

As every jurisdiction has a different way of calculating charges and costs, it is often difficult to compare directly. However, one might anticipate considerably greater spread between B.C. Coast and

TABLE 9.1

B.C. Coast Vegetable Co-operative Association

Estimated Impact of Decline in the Volume of Potatoes Washed and Graded Centrally
For The Fiscal Year Ending June 30, 1990
Based On The Current Charge Allocation System And Volume Forecasts
Prepared by Management

% BELOW MANAGEMENT FORECAST	Tons Washed & Graded	$Revenue $35/ton	Net Tons[1] Just Handled	$Revenue ($11/ton)	Total Revenue ($)	Management Forecast	Revenue Shortfall (Impact)
10%	32,931	$ 1,152,585	2,744	$ 30,184	$ 1,182,769	$ 1,280,650	($ 97,881)
15%	31,102	1,088,570	4,166	45,826	1,134,396	1,280,650	(146,254)
20%	29,272	1,024,520	5,489	60,379	1,084,899	1,280,650	(195,751)
25%	27,443	960,505	6,860	75,460	1,035,965	1,280,650	(244,685)
30%	25,613	896,455	8,233	90,563	987,018	1,280,650	(293,632)
35%	23,724	832,440	9,605	105,655	938,095	1,280,650	(342,555)
40%	21,954	768,390	10,977	120,747	889,137	1,280,650	(381,513)
45%	20,125	704,375	12,349	135,839	840,214	1,280,650	(440,436)
50%	18,295	640,325	13,721	150,931	791,256	1,280,650	(489,394)

[1] Assuming a 25% average cull rate.

Assumptions: - current allocation system and charges
- farm washed/graded/packed, shipped from plant

V10/10

Washington State packers on grower charges considering the spread on labour rates. It should be noted that many of the Washington State packing houses concentrate on their own production rather than custom work. As we were not privy to the financial statements of those packing houses, we do not know at what stage during the integrated growing and packing operations they take their profit. As custom work is a small proportion of the work of most of the packers interviewed in Washington State, it is likely that the charges are not reflective of actual costs and more reflect of what they can get from the custom marketplace.

9. **The management information system is not adequate in its detail nor in the timeliness of reports. This area of administration needs a greater degree of automation in order to produce standard costing system information that is useful to management. As it now operates, it is difficult to isolate costs and charges by function or product.**

   The management information system, particularly cost allocations, needs to be more responsive and focused. Also, the costing information needs to be explained to members. They should utilize the services of their accountant to develop such a costing system.

10. **The Board of Directors represent the members' interest in setting policy for the Co-operative. During this period of industry concern and transition, the Board could be assisted in its deliberations by having specialized, experienced outside advisors.**

    The Board of Directors should consider adding two non-voting advisory Directors with specific experience in plant operations/manufacturing and in marketing. These Directors should have senior food industry experience but not necessarily in the vegetable industry.

11. **The level of grower/member dissatisfaction with their returns and the Co-operative's operations is very high. Potato grower members in particular expressed an urgent need for action and change.**

    Growers are highly frustrated with their financial situation and blame several issues including management, ineffective marketing and costly plant labour. Growers need more information on operating costs, management actions, market concerns and other matters that impact on them. Also, growers should be made aware of the type of research and industry support to which management devotes time. More information may allay some of the concerns of growers as they understand the reasons for decisions.

12. **Approval has been given by the Board of Directors to allow on the farm washing, grading and packing. With the sense of urgency and frustration of growers, it is likely that there will be an increase in the number of growers who decide to try farm pack but the costs of the change are not well known.**

TABLE 9.2

B.C. Coast Vegetable Co-operative Association

ACTION PLAN

Time Frame	Task	Responsibilities
(1) Immediately	Report study findings to members	Bd. of Directors/Mgt.
(2) 1-3 months	Grower seminar to exchange farm pack information	Management
(3) 1-3 months	Appoint advisors to Board of Directors	Bd. of Directors
(4) 3 months	Conduct grower referendum	Bd. of Directors
(5) 3-6 months	Analyze referendum results and plan changes (downsizing, moving, comparative costing, union discussions)	Mgt./Bd. of Directors
(6) 6 months	Make recommendations to growers	Bd. of Directors
(7) 3-6 months	Review all opportunities to add plant production, expand volume process new products	Management
(8) 3-6 months	Develop MIS improvements - communicate information to growers	Management
(9) 6 mo.-1 year	Implement new charges; cull surcharge: late charge	Management
(10) 6 mo.-1 year	Work with major customers to ensure support and good market intelligence	Management
(11) 6 mo.-1 year	Implement operating plan changes, including additional production	Management
(12) 1-5 years	Continue plan from Year 1	Bd. of Directors

13. If some growers choose to pack their product on the farm, then it will reduce the volume of product packed at the Co-operative. A reduced volume will spread the fixed costs over less product and may necessitate a reduction in staff, operations, plant size, or location, as costs increase.

There is a lack of good information concerning on-the-farm washing, grading and packing costs. It would be useful for growers who do become involved in farm packing to exchange information with each other on costs, problems and labour availability. The Co-operative could make it a condition precedent in permitting farm pack that growers who opt for this approach share their costing information with the Co-operative and other members.

In order for the management to plan their operations at the lowest cost and for the Board of Directors to determine policies on farm pack, it is imperative that the opinions and commitment of the members be attained. In order to do this, a carefully worded referendum of 100% of the membership is required in order to determine which growers intend to do farm packing and whether they intend to do washing and grading alone or also intend to pack their products. It is important that growers who opt to deliver their product to the Co-operative sign a contractual arrangement to commit themselves to this delivery. Without such a commitment, management cannot plan operation size and the cost will continue to rise.

Table 9.1 provides a summary of the revenue that would be lost by the Co-operative for the fiscal year ending June 30, 1990 from the various reductions in the volume of potatoes shipped to the plant in the case of increasing quantities handled on the farm. As indicated, even a 10% reduction in delivery would result in a loss of revenue of nearly $98,000, a portion or all of which would have to be covered by a surcharge, depending on the lead-time management would have to respond in order to reduce labour expenses on the washing and grading line.

14. Table 9.2 outlines our Action Plan, which summarizes our recommendations. The presentation of the study findings to the growers followed by a carefully worded referendum on grower plans is most important.

X. ALTERNATIVES AND MODIFICATIONS TO THE CO-OPERATIVE'S OPERATING SYSTEM

This chapter presents the various alternatives that we have identified that could be considered by the Co-operative in order to reduce costs or improve operations. The alternatives that we have identified are:

- **Alternative 1 - improve the effectiveness of the present system by implementing some or all of the following changes:**

  - minimum 24 hour ordering (except by exception);
  - work from inventory to pack orders;
  - set out and adhere to labour standards by product and report to management on a daily basis;
  - improve the management information system (operations, sales, accounting and product costing);
  - charge growers for culls beyond an agreed rate or pay a premium for loads with low cull rates;
  - penalize growers who fail to deliver on time, resulting in a loss of efficiency or down-time in the plant;
  - increase plant utilization by packing other products or similar products from other jurisdictions in the off-season;
  - continue the present operation but in a new site;
  - determine which growers want to do farm pack and confirm those who intend to supply the Co-operative with ungraded product over the next 5 years;
  - consider expanding the Board of Directors to include advisory members with experience in operations and marketing;
  - provide better information on marketing and financial issues to grower members on a timely basis;
  - allocate charges to processing potatoes but reflect the true cost of their utilization of plant capacity and add the share that is dropped from the processing potato charges to the other products going through the plant.

- **Alternative 2 - farm wash, grade and package all products then deliver to the central distribution point for sale to and pick up by wholesalers.**

- **Alternative 3 - farm wash and grade all products but deliver to the Co-operative for central packaging, distribution and sale.**

- **Alternative 4 - farm wash, grade and pack all products and deliver from the farm to the customers with coordination through a central sales organization.**

- **Alternative 5 - allow farm pack by any members while retaining central distribution and sales and Co-operative packing for those who do not want to do their own.**

The details of these alternatives are presented in Tables 10.1 through to 10.10. In these tables, each alternative is discussed under the headings: Changes to the System; Reasons; Benefits; Costs and Concerns; and Actions Required and By Whom. Also, these tables outline the probable cost savings of implementing the alternatives.

Table 10.1 - Alternative #1: Improve Effectiveness of Present System

Changes to System	Reasons	Benefits	Costs/Concerns	Action Req'd. (By whom)
1. Min. 24 hour ordering (except by exception).	- Reduce number of package size changes in production. - Improve operating efficiency. - Assist in supplying from inventory.	- Each package size change costs dollars in line down-time. - Improve operating planning and lower costs.	- None direct. - May upset some customers - management should discuss with each large customer.	Prepare policy and inform trade (Management) (Board of Directors)
2. Work from inventory to pack orders.	- Improves operating efficiency through better planning and use of staffing. - Permits more even work flow and scheduling.	- Less down-time and improved output.	- None.	- Schedule production based on historic records (Management).
3. Set out and adhere to labour standards by product.	- Improved control over costs will result if management has daily info.	- Reduced labour costs as management better informed on performance. - Brings inefficiencies to attention of management daily.	- Preparation of standards by product and package size.	- Prepare standards and reporting form then implement (Management). - Monitor results and implement changes as required.
4. Improved MIS system: - operations - sales - accounting (product costing & charges)	- Cannot adequately control costs without timely, accurate info. - More information to growers so they can monitor. - Tighter linkages between costs and charges.	- Will provide info to facilitate tighter operations procedures.	- Development of standard reports. - Purchase of personal computer and software.	- Management to question whether the present info is sufficient. - Purchase personal computer. - Management - prepare standard cost information.

Table 10.1 - Alternative #1: Improve Effectiveness of Present System (cont'd)

Changes to System	Reasons	Benefits	Costs	Action Req'd. (By whom)
5. Charge growers for culls beyond an agreed rate (eg. 20% for potatoes) or pay a premium for loads with low cull rate.	- As culls increase in a load the line speed slows down and costs go up. Presently these costs are shared by all growers. A penalty for excess culls would be more fair to good growers and may induce more farm pregrading.	- Reduce operating costs. - Return to offset slow line speeds.	- Administration.	- Determine cost differentiation by crop for different cull % (Management) (Board of Directors).
6. Penalize growers who fail to deliver on time, resulting in loss of efficiency or down-time in plant.	- Non or late delivery may result in plant workers' down-time which costs all members.	- Collection of charges equal to excess labour costs. - Improve grower responsiveness to reduce costs and smooth out operations.	- Administration.	- Policy from Board of Directors. - Develop measurement of down-time charge.
7. Increase plant utilization by packing other products in off season.	- Increased through-put should reduce unit cost. - Opportunity to supply market when out of local product.	- Reduced costs per producer (measure).	- Depends upon product and service.	- Exhaustive review by Management of food and non-food products that could be packed.
8. Continue present operations but in a new site.	- Sale of present site and conversion to one or more new sites and building may reduce costs.	- Capital injection from sale of present site. - Improved efficiency of new plant layout. - Maybe tie in with other co-ops.	- What are costs of new facility? - Loss of wholesale business from new site (doubtful).	- Comparative study of specific sites (Management).

Table 10.1 - Alternative #1: Improve Effectiveness of Present System (cont'd)

Changes to System	Reasons	Benefits	Costs	Action Req'd. (By whom)
9. Determine which growers want to farm pack.	- Imperative to precisely determine contract with those growers who will deliver for next 5 years.	- Will know parameters of future operations, financial requirements, etc.	- Referendum.	- Conduct 100% sample of membership (Board of Directors)
10. Expand Board of Directors to include Advisory Members (Operation, Marketing). Also ensure at least one vegetable grower on Board of Directors.	- Would bring industry expertise perspective to the Board. - Add vegetable perspective.	- Improve trade relations and markets.		- Recommendation by Board of Directors.
11. Provide timely and better information to growers on market conditions, competitive situations and financial operations.	- Grower concerns and misunderstandings could be reduced by better information.	- May reduce grower unease and improve co-operation.	- Timely newsletter.	- Management to prepare sample information and send out (Management)
12. Refine cost allocation system to better reflect cost of handling processing potatoes.	- More equitable system for processing and non-processing crops.	- Processing potato growers naturally will experience higher costs as total costs re-allocated.	- All other members may experience higher costs as total costs re-allocated.	- Management to prepare revised charges and present to Board of Directors.

Table 10.2 - Alternative #2: Farm Pack All Products - Central Sale and Distribution Through Co-operative

Changes to System	Reasons	Benefits	Costs/Concerns	Action Req'd. (By whom)
Eliminate all washing, grading and packing functions at the Co-op but receive all products for distribution through a central warehouse. Maintain a central sales desk. This would entail a greatly reduced physical facility, sale of existing equipment and reduction in operating personnel.	This will pass all plant costs for washing, grading, packing to the grower with the expectation that the lower labour labour rate anticipated will allow a greater return to the grower.	- Anticipated savings in costs will depend primarily on capital costs of on-farm processes, operating efficiency of individual growers and labour costs. - Savings in Co-op costs at $2,139,600 (Tables 10.3 and 10.4) - There would be some contribution to Co-ops from sale of equipment. - May be able to sell present facility and relocate.	- Capital cost of on-farm processing will vary by grower depending on size, crop and location (see Chap. VIII). Range from $5,000 - $100,000. These costs would have to be financed individually. - Variation in individual packer quality would entail hiring at least one quality control person. - Delivery of required product on time, particularly same day delivery would be a problem. - On-farm processing efficiencies will vary. - Growers will be required to devote less time to their traditional pursuits and more to packing tasks. - Obtaining adequate labour and equipment for all growers may be difficult.	- Hold a referendum of all members to determine their desires on this subject (Board of Directors). - Pass a resolution that the Co-op will no longer wash, grade or package product (Board of Directors). - Examine alternatives to the present facilities and location (Management) - Inform customers of impending changes.

TABLE 10.3

B.C. Coast Vegetable Co-operative Association

Alternative 2: Farm Wash, Grade & Pack
Central Warehouse and Selling

$ Available to Farmers on Basis of
Management's Operating Projections
for the Fiscal Year Ending June 30, 1990
($'000)

SOURCE OF FUNDS	Potatoes	Beets	Carrots	Onions	Rutabagas	Parsnips & Cabbage	Total ($000)
Washing & Grading Wages Returned to Farms	$ 696.0	$ 14.3	$ 220.9	$ 88.7	$ 15.0	---	$1,034.9
Packing Wages and Supplies Returned to Farm	402.5	---	118.3	107.1	---	---	627.9
REDUCTION IN STAFFING IN WAREHOUSE							
1 Supervisor							35.5
50% Reduction in General Warehouse Wages and Supplies							148.3
75% Reduction in Maintenance Wages and Supplies							239.0
REDUCTION IN ADMINISTRATION EXPENSES							
Reduction clerical staff (3 persons)							54.0
					TOTAL AVAILABLE		$2,139.6

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TABLE 10.4

B.C. Coast Vegetable Co-operative Association

Alternative 2: Farm Wash, Grade & Pack
Central Warehouse and Selling

Forecast Operating Expenditures
for the Fiscal Year Ending June 30, 1990[1]

	($000)
DIRECT HANDLING	
Shipping & Receiving Wages	$ 178.5
Sub-Total	$ 178.5
GENERAL WAREHOUSE	
Warehouse Supervisor	35.5
General Wages	110.6
General Supplies	37.8
Utilities	118.9
Maintenance Wages	42.7
Maintenance Supplies	37.5
General Depreciation	70.0
Sub-Total	$ 453.0
MARKETING	
Commission Fees	106.2
Sales and Field Staff	110.0
Advertising	20.0
Interest on Line of Credit	35.0
Sub-Total	$ 271.2
ADMINISTRATION	
Insurance	21.0
Interest	75.0
Administration	383.2
Taxes and Licenses	85.0
Building Depreciation	27.2
Sub-Total	$ 591.6
TOTAL	**$1,494.1**

1 Based on management's estimates and our estimates of packaging wages and supplies.

V10/10

Table 10.5 - Alternative #3: Farm Wash and Grade All Products - Central Packaging Sale and Distribution

Changes to System	Reasons	Benefits	Costs/Concerns	Action Req'd. (By whom)
Eliminate all washing and grading functions at the Co-op but receive all products for packaging and distribution through a central warehouse. Maintain a central sales desk. This would entail a greatly reduced physical facility, sale of existing equipment and reduction in operating personnel.	This will pass all plant costs for washing and grading packing to the grower with the expectation that the lower labour labour rate anticipated will allow a greater return to the grower. Packaging equipment is relatively expensive. Centralized packaging will allow appropriate quality control, scheduling and efficiencies of superior equipment.	- Anticipated savings in costs will depend primarily on capital costs of on-farm processes, operating efficiency of individual growers and labour costs. - Savings in Co-op costs at $1,336,700 (Tables 10.6 and 10.7) - There would be some contribution to Co-ops from sale of equipment. - May be able to downsize present facility and relocate.	- Capital cost of on-farm processing will vary by grower depending on size, crop and location (see Chap. VIII). Range from $3,000 - $50,000. These costs would have to be financed individually. - Variation in individual packer quality would entail hiring at least one quality control person. - On-farm processing efficiencies will vary. - Growers will be required to devote less time to their traditional pursuits and more to packing tasks. - Obtaining adequate labour for all growers may be difficult.	- Hold a referendum of all members to determine their desires on this subject (Board of Directors). - Pass a resolution that the Co-op will no longer wash or grade product (Board of Directors). - Examine alternatives to the present facilities and location (Management) - Inform customers of impending changes.

TABLE 10.6

B.C. Coast Vegetable Co-operative Association

Alternative 3: Farm Wash & Grade
Central Pack, Warehouse and Selling

$ Available to Farmers on Basis of
Management's Operating Projections
for the fiscal year ending June 30, 1990
($'000)

SOURCE OF FUNDS	Potatoes	Beets	Carrots	Onions	Rutabagas	Parsnips & Cabbage	Total
Washing & Grading Wages Returned to Farm	$696.0	$ 14.3	$220.9	$88.7	$ 15.0	-	$1,034.9
REDUCTION IN STAFFING IN WAREHOUSE							
1 Supervisor	-	-	-	-	-	-	35.5
30% Reduction in General Warehouse Wages and Supplies							89.0
50% Reduction in Maintenance, Wages and Supplies							159.3
REDUCTION IN ADMINISTRATION EXPENSES							
Reduction in clerical staff (1 person)							18.0
					TOTAL AVAILABLE		$1,336.7

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TABLE 10.7

B.C. Coast Vegetable Co-operative Association

Alternative 3: Farm Wash & Grade
Central Pack, Warehouse and Selling

Forecast Operating Expenditures
for the Fiscal Year ending June 30, 1990[1]

	($000)
DIRECT HANDLING	
Shipping and Receiving	$178.5
Subtotal	$178.5
PACKAGING	
Wages and Supplies	$627.9
Subtotal	$627.9
GENERAL WAREHOUSE	
Warehouse Supervisor	$ 35.5
General Wages	154.8
General Supplies	52.9
Utilities	118.9
Maintenance Wages	84.4
Maintenance Supplies	75.0
General Depreciation	20.0
Subtotal	$541.5
MARKETING	
Commission Fees	106.2
Sales and Field Staff	110.0
Advertising	20.0
Interest on operating line of credit	35.0
Subtotal	$271.2
ADMINISTRATION	
Insurance	21.0
Interest (Term Loan)	75.0
Administration	401.2
Taxes and Licences	85.0
Building Depreciation	27.2
Subtotal	$609.4
TOTAL	$2,228.5

1 Based on management's estimates and our estimates of packaging wages and supplies.

V10/10

Table 10.8 - Alternative #4: Farm Wash, Grade and Pack All Products; Deliver from Farm; Central Sales Desk

Changes to System	Reasons	Benefits	Costs/Concerns	Action Req'd. (By whom)
Eliminate all washing, packing and delivery functions at the Co-op. Maintain a central sales desk. This would enable sale of facility and reduction in personnel.	This will pass all plant costs for washing, grading, packing to the grower with the expectation that the lower labour labour rate anticipated will allow a greater return to the grower. Also savings may be realized by the grower in delivery to the Co-op, although these may be offset by costs of delivery from farm to customers.	- Anticipated savings in costs will depend primarily on capital costs of on-farm processes, operating efficiency of individual growers and labour costs. - Savings in Co-op costs at $2,718,600 (Table 10.9). - There would be a contribution to the Co-op members from sale of the present facility and equipment.	- Serious problem of delivery for smaller growers - note 55% sales now to 3 large retail chains. - Quality control of individual growers difficult and could affect all growers. - Customers don't want to pick up from individual growers and specifically dislike this alternative. - Capital cost of on-farm processing will vary by grower depending on size, crop and location (see Chap. VIII). Range from $5,000 - $100,000. These costs would have to be financed individually. - Delivery of required product on time, particularly same day delivery would be a problem. - On-farm processing efficiencies will vary. - Growers will be required to devote less time to their traditional pursuits and more to packing tasks. - Obtaining adequate labour and equipment for all growers may be difficult.	- Hold a referendum of all members to determine their desires on this subject (Board of Directors). - Pass a resolution that the Co-op will no longer wash, grade or package product (Board of Directors). - Examine alternatives to the present facilities and location (Management) - Inform customers of impending changes.

TABLE 10.9

B.C. Coast Vegetable Co-operative Association
Alternative 4: Farm Wash, Grade & Pack and Delivery
Central Selling Only

$ Available to Farmers on Basis of
Management's Operating Projections
for the Fiscal Year Ending June 30, 1990
($'000)

SOURCE OF FUNDS	Potatoes	Beets	Carrots	Onions	Rutabagas	Parsnips & Cabbage	Total
Washing & Grading Wages Returned to Farms (000$)	$ 696.0	$14.3	$ 220.0	$ 88.7	$ 15.0	---	$1,034.9
Packing Wages and Supplies Returned to Farm	402.5	---	118.3	107.1	---	---	627.9
REDUCTION IN STAFFING IN WAREHOUSE							
Shipping & Receiving Wages Returned to Farm	16.4	1.3	19.9	14.0	3.3	23.6	178.5
Supervisory, General Warehouse, Wages, Supplies, Repairs and Maintenance Returned to Farm	---	---	---	---	---	---	805.3
Reduction in Administration Expense							
Reduction in clerical staff (4 staff)							72.0
					TOTAL AVAILABLE		$2,718.6

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Table 10.10 - Alternative #5: Allow Farm Pack by Any Members, Retain Central Distribution and Sales

Changes to System	Reasons	Benefits	Costs/Concerns	Action Req'd. (By whom)
Permit any members to wash, grade and/ or pack their products (to be distributed and sold through central agency). Also maintain Co-op to wash, grade, pack and distribute remaining products.	- Allows growers who wish to the opportunity to reduce costs of plant functions if they are able. Permits freedom of choice. - May permit reduction in plant size if sufficient quantity farm packed.	- May benefit individuals who can perform present plant functions at costs that are less than present costs.	- This will reduce the throughput of the plant and spread fixed costs over less product thus raising charges to remaining members unless fixed costs are reduced. - Product quality may vary and Co-op will need to keep track of farm pack in order to be able to allocate claims. - Concern over plant job loss and union reaction as per #2.	- Conduct referendum of grower interest in this change (Board of Directors). - Pass resolution permitting members to farm pack but, once decision made by member, they cannot continue to deliver non-packed product to Co-op (Board of Directors). - Obtain contractual agreement from all members not wanting to farm pack ensuring their commitment to deliver all of their production to the Co-op for a set period of years to permit planning of appropriate facility size.

APPENDIX 1

B.C. Coast Vegetable Co-operative Association

Grower Survey Questionnaire

QUESTIONNAIRE FOR GROWERS

NAME: DATE:

1. a. What root crops do you usually produce?
   b. How much do you usually produce of each crop? (weight).
   c. What % of your production do you send for processing and COOP?

Crops	Weight	% Shipped to COOP for Processing
Potatoes	_____	_____
Carrots	_____	_____
Onions	_____	_____
Rutabagas	_____	_____
Parsnips	_____	_____

2. a. What % of products produced fall into specific grades?

Potatoes	_____
Carrots	_____
Onions	_____
Rutabagas	_____
Parsnips	_____

3. a. Have you any concerns about the present system of processing, marketing and distributing root crops?

   No ____ Yes ____ If yes, go to 3b, if no go to #4.

   b. What concerns do you have about the system (be as specific as possible) and how, in your opinion, do these factors impact your returns?

   1. Site of existing facility

   _____

   _____

   _____

   _____

2. Layout and size of existing facility

3. Equipment at existing facility

4. Management of existing COOP

5. Selling and marketing by COOP

6. Staffing of plant

7. Poor quality of produce being delivered by other growers -- resulting in longer processing times

8. Other (please describe)

c. What actions do you think should be undertaken to overcome these concerns (if suggestions include equipment purchase, relocation, query as to level of investment grower would be willing to make)

1. Site of existing facility

2. Layout and size of existing facility

3. Equipment at existing facility

4. Management of existing COOP

5. Selling and marketing by COOP

6. Staffing of plant

7. Poor quality of produce being delivered by other growers -- resulting in longer processing times

APPENDIX 2

B.C. Coast Vegetable Co-operative Association

Customer Survey Questionnaire

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B.C. COAST VEGETABLE CO-OPERATIVE ASSOCIATION

OPERATIONS AND MARKETING REVIEW

1. Name of firm: _____

2. Interviewee name/title: _____

3. Products purchased (% total) in lb. or $ from Co-op:

   Potatoes _____ Onions _____ Rutabagas _____

   Carrots _____ Beets _____ Parsnips _____

4. Future purchasing trend re: B.C. produce _____

5. Information on purchases from other jurisdictions (region, reasons, volume, trends):

   Potatoes _____

   Carrots _____

   Onions _____

   Beets _____

   Rutabagas _____

   Parsnips _____

   including other agencies in B.C.

6. Major customer groups

   Retail supermarkets _____

   Independent stores _____

   Food service _____

   Other _____

7. Do you pick up in own trucks (yes) _____ or contracted (yes) _____

8. What is your usual volume of pick up?_____

   What is your frequency of pick up? _____

9. At what time of the day do you usually pick up?_____

10. Usually, how much lead time do you give the Co-op between ordering and pick up?_____

11. How do you feel about the Richmond location of the Co-op?

    suitable _____ indifferent _____ prefer another location _____

    If another location, where and why _____

    _____

    Would a location close to the Greenhouse and Lettuce Co-ops be a good choice?

    _____

12. On a scale of 1 to 5, we want to rank your satisfaction with the services and products of the Co-op compared to other suppliers:

    1. very unsatisfactory (bad)
    2. often poor
    3. acceptable
    4. usually good
    5. very satisfactory (excellent)

	Potatoes	Carrots	Onions	Beets	Rutabagas	Parsnips
Product quality						
Product standardization						
Packaging						
Price						
Dependability of supply						
Response to orders						
Relationship with staff						
Others						

13. There are several options that can be considered to change the present system of all products being washed, graded and packed at the Co-op and picked up from their plant. We would appreciate your opinions on possible modifications to this system such as whether you are (1) opposed, (2) indifferent, (3) in favour and how it might affect your purchases of B.C. produce. Also, would you anticipate different prices with each option i.e. relative to what you now pay Co-op (% more or less)? For the option you select, indicate your expectations re: load size, delivery, lead time.

(a) All washing, grading and packing done on the farm and the product delivered to you _____

_____

(b) As in (a) but you pick up _____

_____

(c) All washing, grading and packing done on the farm, then delivered to a central distribution centre (Co-op) for your pick up.

_____

_____

(d) All washing and grading done on the farm then delivered to you (or picked up by you) in bulk for your own packaging _____

_____

(e) All washing and grading done on the farm then delivered to the Co-op for packaging and pick up by you _____

_____

(f) Status quo - continue to wash, grade and pack at the Co-op for your pick up _____

_____

(g) A combination of any of the above _____

_____

APPENDIX 3

B.C. Coast Vegetable Co-operative Association

Direct Cash Costs for Washing & Grading,
Receiving, Shipping and Packaging

On a Net Ton Basis

1986 to 1988

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APPENDIX 3

POTATOES

	1986	1987	1988
POTATOES (Standard)			
Washing & Grading			
Total Tons (Gross)	41,737	53,527	47,761
Cull Rate	28%	25%	29%
Total Tons (Net)	30,252	40,386	34,003
Total Wages ($)	$644,721	$956,318	$846,473
$/Ton	**$ 21.31**	**$ 23.68**	**$ 24.89**
Receiving			
Total Tons (Net)	30,252	40,386	34,003
Total Wages	$ 60,358	$ 88,892	$ 69,431
$/Ton	**$ 1.99**	**$ 2.20**	**$ 2.04**
Shipping			
Total Tons (Net)	30,252	40,386	34,003
Total Wages	$ 43,993	$ 64,197	$ 50,182
$/Ton	**$ 1.45**	**$ 1.59**	**$ 1.48**
Total $/Ton (Standard)	**$ 24.75**	**$ 27.47**	**$ 28.41**
POTATOES (Packaged)			
Net Tons	9,261	11,680	11,370
Total Wages & Supplies	$297,333	$410,712	$388,265
$/Ton	**$ 32.11**	**$ 35.16**	**$ 34.14**
Total $/Ton (Packaged)	**$ 56.86**	**$ 62.63**	**$ 62.55**

BEETS

	1986	1987	1988
Washing & Grading			
Total Tons (Gross)	310	522	378
Cull Rate	20%	20%	33%
Total Tons (Net)	248	416	256
Total Wages ($)	$ 9,353	$15,990	$12,620
$/Ton	**$ 37.71**	**$ 38.44**	**$ 49.49**
Receiving			
Total Tons (Net)	248	416	256
Total Wages	$ 448	$ 867	$ 550
$/Ton	**$ 1.81**	**$ 2.08**	**$ 2.15**
Shipping			
Total Tons (Net)	248	416	256
Total Wages	$ 468	$ 648	$ 492
$/Ton	**$ 1.89**	**$ 1.56**	**$ 1.92**
Total $/Ton	**$ 41.41**	**$ 42.08**	**$ 53.56**

CARROTS

	1986	1987	1988
Washing & Grading			
Total Tons (Gross)	6,513	6,501	8,602
Cull Rate	28%	27%	28%
Total Tons (Net)	4,677	4,748	6,160
Total Wages ($)	$186,478	$232,551	$286,079
$/Ton	**$ 39.87**	**$ 48.98**	**$ 46.44**
Receiving			
Total Tons (Net)	4,677	4,748	6,160
Total Wages	$ 9,419	$10,796	$12,505
$/Ton	**$ 1.96**	**$ 2.27**	**$ 2.03**
Shipping			
Total Tons (Net)	4,807	4,837	6,376
Total Wages	$ 9,087	$ 9,995	$12,233
$/Ton	**$ 1.89**	**$ 2.07**	**$ 1.92**
Total $/Ton	**$ 43.72**	**$ 53.32**	**$ 50.39**
Packaging			
Total Tons	1,200	1,494	1,253
Wages & Supplies	101,658	157,740	110,865
$/Ton	$ 84.72	$105.58	$ 88.49
Total	**$128.44**	**$158.90**	**$138.87**

ONIONS

	1986	1987	1988
Washing & Grading			
Total Tons (Gross)	5,509	4,008	5,204
Cull Rate	10%	14%	12%
Total Tons (Net)	4,962	3,449	4,584
Total Wages ($)	$106,380	$ 86,626	$107,453
$/Ton	**$ 21.44**	**$ 25.12**	**$ 23.44**
Receiving			
Total Tons (Net)	4,962	3,449	4,584
Total Wages	$ 7,967	$ 6,656	$ 7,565
$/Ton	**$ 1.61**	**$ 1.93**	**$ 1.65**
Shipping			
Total Tons (Net)	4,986	3,551	4,704
Total Wages	$ 9,426	$ 7,377	$ 9,024
$/Ton	**$ 1.89**	**$ 2.08**	**$ 1.92**
Total $/Ton	**$ 24.94**	**$ 29.13**	**$ 27.01**
Packaging			
Total Tons	2,222	1,437	1,674
Wages & Supplies	$118,496	$ 74,790	$101,681
$/Ton	**$ 53.33**	**$ 52.05**	**$ 60.74**
Total	**$ 78.27**	**$ 81.18**	**$ 87.75**

RUTABAGAS

	1986	1987	1988
Washing & Grading			
Total Tons (Gross)	1,527	910	1,123
Cull Rate	22%	15%	18%
Total Tons (Net)	1,190	777	925
Total Wages ($)	$25,388	$18,073	$18,608
$/Ton	**$ 21.33**	**$ 23.26**	**$ 20.12**
Receiving			
Total Tons (Net)	1,190	777	925
Total Wages	$ 2,208	$ 1,511	$ 1,633
$/Ton	**$ 1.86**	**$ 1.94**	**$ 1.77**
Shipping			
Total Tons (Net)	1,199	1,127	1,144
Total Wages	$ 1,744	$ 1,792	$ 1,688
$/Ton	**$ 1.45**	**$ 1.59**	**$ 1.48**
Total $/Ton	**$ 24.64**	**$ 26.79**	**$ 23.37**

PARSNIPS AND CABBAGE

	1986	1987	1988
Handling			
Total Tons (Net)			
Parsnips	130	154	172
Cabbage	4,679	5,721	4,704
Total	**4,809**	**5,875**	**4,876**
Total Wages ($)	$20,980	$28,016	$21,589
$/Ton	**$ 4.36**	**$ 4.77**	**$ 4.43**

APPENDIX 4

B.C. Coast Vegetable Co-operative Association

Total Costs by Crop and Function
Fresh Market Products
1986 - 1988

COSTS BY PRODUCT AND FUNCTION[1]
$ PER NET TON
1986

Product-Specific/Direct	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS AND CABBAGE
Receiving	$ 1.99	$ 1.81	$ 1.96	$ 1.61	$ 1.86	$ -
Washing and Grading	21.31	37.71	39.87	21.44	21.33	-
Shipping	1.45	1.89	1.89	1.89	1.45	4.36
Marketing Commission Fees	1.85	1.85	1.85	1.85	1.85	1.85
Sub-total	26.60	43.26	45.57	26.79	26.49	6.21
Packaging	32.11	N/A	84.72	53.33	N/A	N/A
Sub-total	58.71		130.29	80.12		
Not Product-Specific/Indirect (Plant Costs)						
Insurance and Property Taxes	1.74	1.74	1.74	1.74	1.74	1.74
Plant Depreciation	.52	.52	.52	.52	.52	.52
Repairs and Maintenance	7.01	7.01	7.01	7.01	7.01	-
General Warehouse	10.19	10.19	10.19	10.19	10.19	10.19
Equipment Depreciation	2.94	2.94	2.94	2.94	2.94	-
Sub-total	22.40	22.40	22.40	22.40	22.40	12.45
Not Product-Specific/Indirect (Overhead)						
Advertising	2.29	2.29	2.29	2.29	2.29	2.29
Selling and Field	2.84	2.84	2.84	2.84	2.84	2.84
Administration	9.13	9.13	9.13	9.13	9.13	9.13
Building Depreciation	.06	.06	.06	.06	.06	.06
Sub-total	14.32	14.32	14.32	14.32	14.32	14.32
TOTAL - EXCLUDING PACKAGING	$62.32	$79.98	$82.29	$63.51	$63.21	$32.98
TOTAL - INCLUDING PACKAGING	$94.43	N/A	$167.01	$116.84	N/A	N/A

[1] There was a minimal quantity of parsnips washed and graded at the plant in 1986 and 1987. Accordingly, we treated this product as being farm-packed in each of the last three years.

COSTS BY PRODUCT AND FUNCTION[1]
$ PER NET TON
1987

Product-Specific/Direct	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS AND CABBAGE
Receiving	$ 2.20	$ 2.08	$ 2.27	$ 1.93	$ 1.93	$ -
Washing and Grading	23.68	38.44	48.98	25.12	23.26	-
Shipping	1.59	1.56	2.07	2.08	1.94	4.77
Marketing Commission Fees	1.90	1.90	1.90	1.90	1.90	1.90
Sub-total	29.37	43.98	55.22	31.03	29.03	6.67
Packaging	35.16	N/A	105.58	52.05	N/A	N/A
Sub-total	64.53		160.80	83.08		
Not Product-Specific/Indirect (Plant Costs)						
Insurance and Property Taxes	1.42	1.42	1.42	1.42	1.42	1.42
Plant Depreciation	.43	.43	.43	.43	.43	.43
Repairs and Maintenance	8.52	8.52	8.52	8.52	8.52	-
General Warehouse	10.81	10.81	10.81	10.81	10.81	10.81
Equipment Depreciation	3.57	3.57	3.57	3.57	3.57	-
Sub-total	24.75	24.75	24.75	24.75	24.75	12.66
Not Product-Specific/Indirect (Overhead)						
Advertising	2.30	2.30	2.30	2.30	2.30	2.30
Selling and Field	2.30	2.30	2.30	2.30	2.30	2.30
Administration	9.16	9.16	9.16	9.16	9.16	9.16
Building Depreciation	.05	.05	.05	.05	.05	.05
Sub-total	13.81	13.81	13.81	13.81	13.81	13.81
TOTAL - EXCLUDING PACKAGING	67.93	$82.54	$93.78	$69.59	$67.59	$33.14
TOTAL - INCLUDING PACKAGING	$103.09	N/A	$199.36	$121.64	N/A	N/A

[1] There was a minimal quantity of parsnips washed and graded at the plant in 1986 and 1987. Accordingly, we treated this product as being farm-packed in each of the last three years.

COSTS BY PRODUCT AND FUNCTION[1]
$ PER NET TON
1988

Product-Specific/Direct	POTATOES	BEETS	CARROTS	ONIONS	RUTABAGAS	PARSNIPS AND CABBAGE
Receiving	$ 2.04	$ 2.15	$ 2.03	$ 1.65	$ 1.77	$ -
Washing and Grading	24.89	49.49	23.44	20.12	23.26	-
Shipping	1.48	1.92	1.92	1.92	1.48	4.43
Marketing Commission Fees	12.15	2.15	2.15	2.15	2.15	2.15
Sub-total	30.56	55.71	52.54	29.16	25.52	6.58
Packaging	34.14	N/A	88.48	60.74	N/A	N/A
Sub-total	64.70		141.02	89.90		
Not Product/Specific/Indirect (Plant Costs)						
Insurance and Property Taxes	1.81	1.81	1.81	1.81	1.81	1.81
Plant Depreciation	.47	.47	.47	.47	.47	.47
Repairs and Maintenance	7.05	7.05	7.05	7.05	7.05	-
General Warehouse	9.98	9.98	9.98	9.98	9.98	9.98
Equipment Depreciation	2.77	2.77	2.77	2.77	2.77	-
Sub-total	22.08	22.08	22.08	22.08	22.08	12.26
Not Product-Specific/Indirect (Overhead)						
Advertising	2.52	2.52	2.52	2.52	2.52	2.52
Selling and Field	2.33	2.33	2.33	2.33	2.33	2.33
Administration	7.70	7.70	7.70	7.70	7.70	7.70
Building Depreciation	.06	.06	.06	.06	.06	.06
Sub-total	12.61	12.61	12.61	12.61	12.61	12.61
TOTAL - EXCLUDING PACKAGING	$65.25	$90.40	$87.23	$63.85	$60.21	$31.45
TOTAL - INCLUDING PACKAGING	$99.39	N/A	$175.71	$124.59	N/A	N/A

[1] There was a minimal quantity of parsnips washed and graded at the plant in 1986 and 1987. Accordingly, we treated this product as being farm-packed in each of the last three years.

APPENDIX 5

List of Contacts

1. 32 Grower Members of the Co-operative

2. B.C. Vegetable Marketing Agencies

   - Interior Vegetables Marketing Agency Co-operative
   - Island Vegetable Co-operative
   - Vancouver Island Produce
   - Post Potato Company
   - B.C. Vegetable Marketing Commission

3. Vegetable Growers Who Pack On-Farm

• John Walsh	Qualicum Beach
• Lloyd Hiebert	Nanaimo
• Robin Woodrow	Campbell River
• Lyle Price	Port Alberni
• Tony Ladder	Grand Forks
• Nick Abetkof	Grand Forks
• Kim Maygard	Armstrong
• Wolgang Zimmerman	Pritchard
• Joe Dolman	Lumby
• Dick Aylard	Mara
• John Mans	Alberta
• Dan Bryn	Ontario
• Don Kruger	Manitoba

4. Other Boards and Organizations

   - Ontario Fresh Potato Growers Marketing Board
   - Manitoba Vegetable Marketing Board
   - Alberta Potato Marketing Board
   - Alberta Vegetable Marketing Board
   - Washington State University, Pullman
   - Oregon State University, Corvallis

5. Packing Operations Outside B.C.

Alberta

• Diamond S Produce	Tabor
• Edmonton Potato Growers	Edmonton
• Sunfresh Farms	Edmonton
• Phoenix Farms	Edmonton
• Newald Vegetables	Brooks
• El Dorado Farms	Red Cliff

Washington

• Agri Pak Inc.	Pasco
• Jones Produce	Quincy
• Quincy Produce	Quincy
• Sunfresh	Royal City
• Sunspiced	Moses Lake
• Warden Produce	Warden
• Weber Produce	Quincy

6. Trade Representatives - B.C.

- Al's Salid King
- Kelly Douglas
- Konings Wholesale
- MacDonalds Consolidated (Safeway)
- Nalley's
- Overwaitea (no response)
- Pacific Produce
- Terminal Fruit
- Tom Yee
- Tri Produce
- White Spot
- Yen Bros.